DOCUMENT RESUME

ED 246 819 HE 017 567

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TITLE	Trends in College Participation Rates.
INSTITUTION	National Center for Higher Education Management Systems, Boulder, Colo.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC. Educational Policy and Organization Program.
PUB DATE	82
CONTRACT	400-80-0109
NOTE	110p.; Report presented as part of the Higher Education Indicators project. For related documents, see HE 017 565-568. An appended questionnaire has small print.
AVAILABLE FROM	National Center for Higher Education Management Systems, P.O. Drawer P, Boulder, CO 80302 ($10.00).
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Age Groups; *College Attendance; Enrollment Influences; *Enrollment Trends; Family Income; Full Time Students; *Geographic Regions; Higher Education; *Racial Differences; *Sex Differences; Trend Analysis
IDENTIFIERS	Higher Education Indicators Project

ABSTRACT

Results of measuring college participation rates for the period 1973-1979 are discussed. After reviewing the literature surrounding the decision to attend college, the study design and basic data employed in the study are discussed. Two sets of indicators of college participation are examined, along with ways that the data can be used to test the feasibility of various public policy options. Data were collected from civilian, noninstitutionalized persons 18-34 years old, based on the Census Bureau's Current Population Surveys for October. College participation rates are presented by five dimensions: geographic region, age, sex, race, and family income level. Additionally, full-time attendance for four age groups (18-21, 22-24, 25-29, and 30-34) are indicated for the five dimensions. Full-time attendance rates for males and females and for whites and non-whites are also indicated. The study data are also applied to the following concerns: participation rates required to offset demographically-induced enrollment decline, and overall unemployment and college participation rates by region. Appendices include a comparison of Bureau of the Census estimates of college enrollments with those derived from the Higher Education General Information Survey. (SW)

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EXECUTIVE SUMMARY

In 1979, over 9,600,000 persons 18-34 years of age were enrolled in some form of postsecondary education. These individuals constituted 15.5 percent of this broad age group. This report describes how this and other measures of college participation varied over the period 1973-1979 for various segments of this age group. The major findings of this study are:

- the rate of college participation for men continued to exceed that for women, although these differences have been narrowing throughout this period;
- the rate of college participation for white adults has consistently remained above that for non-whites, although these differences are narrowing as well;
- this white-non-white pattern of college participation reverses itself in the West with non-white college participation exceeding that for whites;
- not surprisingly, the probability of attending a college or university varies inversely with age. Among 18-21 year old adults (the traditional college-age cohort), college participation was highest in the Northeast and West, and lowest in the South;
- the probability of attending a college or university is directly related to family income level. College participation among individuals from the lowest income quartile was highest in the West;
- With the exception of 1977, women from high income families in the South were more likely to be in college than their male counterparts, a reversal of the pattern found in other regions of the country;

- college participation rates among non-whites from the highest income families (relative to the income distribution of non-whites) were more similar to the participation rates for middle-to-high income whites than to whites from high income families (the latter relative to the income distribution for whites).

Of those persons in college in 1979, 69.6 percent were enrolled in college full-time. The following conclusions can be drawn from the trends in full-time enrollment during this period:

- full-time enrollment status for men remained relatively constant over this period while the proportion of women enrolling full-time declined;
- full-time enrollment among whites also declined during this period while full-time enrollment among non-whites fluctuated at rates that exceeded those for whites;
- full-time enrollment status varies inversely with age. For 18-21 year olds (regardless of sex and race), full-time attendance remained very stable during this period;
- for white students, the probability of enrolling full-time was highest for the lowest and highest income quartiles and lowest for the two middle income quartiles.

TRENDS IN COLLEGE PARTICIPATION RATES

The national demographic trends are relatively well known; it is expected that there will be approximately a 20 percent decline in the number of young adults eligible for college, whether measured in terms of high school seniors, high school graduates, or the total number of 18 year olds (Centra 1978, WICHE 1979). The primary cause of this decline is a substantial reduction in the number of live births in the U.S.; the total number of live births fell from 4,259,000 in 1962 to 3,393,000 in 1972, an absolute decline of slightly over 20 percent. Underlying this decline in the number of live births has been a drop in the birth rate, i.e., the average number of children borne by women of child-bearing age.

Compounding the effects of reductions in the number of live births are national migration patterns. Throughout most of the 1970's, people have migrated from the Northeast and Midwest regions of the country to "sun belt" states. Thus, some states can anticipate increases in the college eligible population, especially when coupled with regional variation in the number of live births. While research is scant, it would suggest that this migration pattern is due to the availability of jobs in the South and West and the continued deterioration of labor markets in the Northwest and Midwest regions (Lansing et al. 1963, Shyrock and Siegel 1973).

These demographic trends indicate that hard times are ahead for postsecondary education in the United States generally, and in the Northeast and North Central regions in particular. It is not correct, however, to immediately convert these demographic trends into enrollment declines for a number of mediating factors are at work. Foremost among these factors is the number of eligible persons who decide to go on to college. Economists have theorized that this decision is explainable by a rational investment model in which potential students calculate

their rate of return to a college education. While there is some debate over how descriptive this rational investment model is of actual choice processes, it has proven to be a powerful, predictive tool. Initially the model was able to explain the substantial increase in the number of students going on to college in the late 1950's and the 1960's. During this period, the rate of return to a college education was estimated to be in the 12-15 percent range (Becker 1975). More recently, it has been argued that this rate of return has fallen to 7.5 percent, a figure that indicates that going to college was not a worthwhile investment from the individual's point of view (Freeman 1976). As a result, it is believed that college participation rates have been declining during the last decade.

What is lacking, however, is a clear set of indicators that describe the rate of college participation during the 1970's. For reasons to be discussed below, it is impossible to extrapolate future college participation rates from these trends. An understanding of such trends could, however, provide a context against which state and federal policy makers can judge the feasibility of alternative public policy recommendations. The purpose of this monograph is to provide these indicators of college participation.

The monograph is divided into four parts. In Part I, a review of the literature surrounding the decision to attend college is provided. This review of the literature is intended to be brief and to focus on the more recent contributions of the social sciences to our understanding of this complex decision problem. Part II describes the basic data employed in this study; the October Current Population Survey of the Bureau of the Census. Part III presents two basic sets of indicators of college participation. The first set of indicators presents the percentage of persons in a variety of age, sex, race, and income groups who

decided to attend college. The second set describes, for those persons who decided to attend college, whether or not they were enrolled as full-time students. Part IV suggests ways in which these data might be used to test the feasibility of various public policy options. Definitive public policy analysis, however, must wait until a more adequate data base can be developed.

I. Review of the Literature

The decision to attend college has been studied by a number of social science disciplines since the early 1960's. Consequently, it is not surprising to find a number of comprehensive reviews of the literature (e.g., Solmon and Taubman's Does College Matter?). The purpose of this brief section is to extend these reviews by focusing upon literature published primarily in the second half of the 1970's.

As noted by Solmon (1973), various social science disciplines have tended to focus upon different benefits associated with college attendance. Economists have examined income differences associated with years of education. Sociologists have tended to examine the occupational attainments of persons with various levels of education. Because the correlation between income and occupational status is quite high, economists and sociologists have been addressing essentially the same problem (Blau and Duncan 1967).

The Human Capital Model

The human capital model is basically a model of labor supply (Becker 1975, Mincer 1975, Dresch 1979). According to this model, the potential student is assumed to calculate the rate of return to each option open to him/her. As long as the last dollar invested in a college education yields a rate of return that equals or exceeds the last dollar spent to finance this education, the potential student

should decide to go to college. While many researchers, including economists, do not believe that people calculate (even subconsciously) the rate of return to various options in this manner, the human capital model has proven to be very powerful in explaining changes in college participation rates.

In calculating the rate of return to a college education for a young adult in the traditional (18-22 year old) college-age cohort, economists have focused on the pecuniary costs and benefits of attending college. On the benefits side, research has explored differences in the distribution of individual earnings. Invariably, data reveal that more educated and experienced workers have greater annual earnings than their less educated and experienced counterparts, differences that are accounted for by the higher wage rates and the greater probability of being fully employed (Mincer 1975).

On the cost side, economists have been careful to distinguish between direct, out-of-the-pocket costs of attending college (i.e., tuition, room and board, transportation, etc.) and indirect costs of attendance. The largest category of these indirect costs is the income foregone by the student, less summer and part-time work. One of the greatest contributions of the human capital model has been the identification of this cost component as a major barrier to college attendance. Specifically, potential students from lower income families have found this cost of attendance to be particularly burdensome (Schultz 1963). In fact, the identification of the cost of foregone incomes led to the establishment of basic opportunity grants which were intended to lower this college attendance barrier.

Given the focus upon the monetary benefits associated with college attendance by young adults, economists have been particularly interested in the factors determining the wage rates and employment opportunities of high school and

college graduates. In the case of the labor market for college graduates, wages and employment opportunities are determined by both the relative supply of college graduates and the demand for college-educated workers. Freeman (1976) has argued that the rate of return to a college education for white males declined in the 1970's due in part to a drop in the demand for white male college graduates. Freeman's results, however, are not unanimously accepted (Rumberger 1980, Witmer 1980, Schwartz and Thornton 1980. For a response to these criticisms, see Freeman 1980).

Freeman (1976) notes also that the decline in the rate of return to a college education is not true for women and minorities. It is clear that women now have much higher expectations concerning rates of return to a college education, especially for women entering traditionally male-dominated fields (Ferber and Mahon 1979, Sandell and Shapiro 1980). Despite these changes, male and female wage differentials persist. What is not clear, however, is whether these differentials are due to role differentiation within families (Mercer and Polachek 1974; Michael, 1975) or to continued labor market discrimination. In the case of minorities, income differences between white and non-white college graduates appear to be persisting (Carliner 1975, Masters 1974, Wright 1978).

Levin (1977) has criticized Freeman's analysis by pointing out that labor market conditions for high school graduates deteriorated faster than for college graduates. This latter research reveals a reversal of the formerly high rates of return to high school graduation (Lermon 1972), particularly when a student's occupational choice is taken into consideration (Schweitzer 1971, Hu et al. 1971, Fredland and Little 1980). Further, it appears that changes in local demand conditions are not indifferent between whites and blacks. Specifically, Kneister et al. (1978, 1979) have argued that blacks fare relatively poorly in times of

high unemployment. In addition, the probability that non-white males will remain in high school appears to be especially sensitive to changes in these local employment conditions (Edwards 1976).

The discussion so far has been directed at the traditional college-age cohort, i.e., those adults 18-22 years old. Conducting a similar analysis for older adults would require substantial modification in what constitutes the opportunity costs of a postsecondary education program. Specifically, a much larger proportion of those adults are attending college part-time, generally working during the day and attending class at night or on the weekend. For these people, very little income is foregone other than in the way of overtime work or a second, part-time job. For these adults, the appropriate opportunity cost concept may involve leisure time activities foregone. By attending classes at night, the older adult student may be giving up time with his/her family or such activities as Monday night football. Unfortunately, relatively little is known about the extent to which these opportunity costs affect the decision to enroll in some postsecondary education program.

Status Attainment Models

As indicated earlier, sociologists have tended to focus upon the relationship between a college education and the status of a person's occupation (Sewell and Hauser; Sewell et al., 1976). These models are thus part of a larger interest on the part of sociologists in the process of social stratification in the United States. In their simplest form, these models begin by identifying a person's socioeconomic background and some measure of academic achievement. These variables are then related to the level of education attained and, in turn, the three variables are related to the individual's occupational attainment. In more complicated models, social-psychological variables are added. In addition, these

models rely upon recursive, structural equation models to estimate the contributions of these variables to one's occupation (Duncan 1975; Blalock 1971).

Results of the application of status attainment models "suggest that a year of education is worth more to the son of a rich man than to the son of a poor man in the status of his first job" (Hauser 1973, p. 133). As in the human capital model, sociologists have explained these differential returns to a college education in terms of the discriminatory practices of labor markets. More recent research has continued this line of research, but focused more attention on minorities and women. In the case of minorities (usually blacks), there appear to be substantial differences in the social mobility patterns of whites and blacks (Parcel 1979, Porter 1974). In the case of women, the process of occupational attainment appears to be the same as that for men, even though women have yet to attain earnings equal to that of comparable men (Featherman and Hauser 1976, Trieman and Terrill 1975).

The inclusion of social-psychological variables has tended to explain more fully the ways in which socioeconomic origins affect status attainment. More specifically, what is it about the socialization process within socioeconomic groups that make it more likely that "the sons of a rich man" are more likely to go on to college in the first place? Trent (1970) argues that "socioeconomic status is more than a matter of educational or financial status but also a matter of differential values and behavior (p. 7). While parents and peers at all socioeconomic levels influence the values and behavior of potential college students, upper socioeconomic level parents place much greater emphasis on and do more to encourage their children to go on to college (Trent 1970). More recently, Porter (1974) has shown that the role of these "significant others" is different within white and black families.

Summary

Emerging from this brief review of the literature are two conclusions. First, rates of return to a college education are dependent upon the relative supply of and demand for college graduates. During the 1970's, the supply of college-educated workers continued to increase as the post-World War II baby boom cohort entered the labor market. Coupled with this continuing increase in the supply of college graduates was a weakening in the demand for college-educated workers. As a result, rates of return to a college education fell, thus lowering the probability that a young adult would enter the system of postsecondary education. Exceptions to this trend were noted for women and minority college graduates.

This relationship between the supply of and demand for college-educated workers suggests a silver lining in the otherwise dismal demographics of the 1980's. As the number of young adults declines, it might be anticipated that the wages for the young college graduate of the late 1980's will increase relative to that of older workers (Freeman 1979, Easterlin 1978). Consequently, the rate of return to a college education could increase, thereby increasing the probability that a young adult would go on to college.

Second, information concerning the rate of return to a college education is only one element affecting the degree of pressure to which young adults are subjected by their parents and peers. The continued role of the system of postsecondary education in this nation's pattern of social mobility is dependent upon how it is perceived by the student and his/her significant others. To the extent that people generally believe that a college education is no longer the avenue to a rewarding and prosperous life, to that extent can one expect a decline in college participation rates.

II. Study Design

Within the context provided by this review of the literature, it is possible to develop a series of college participation indicators. These indicators are based upon data collected by the Bureau of the Census for the period 1973-1979, inclusive. For the purpose of this study, the population is restricted to civilian, non-institutionalized persons 18-34 years of age.

More specifically, the sample employed for the development of student participation indicators are the Current Population Surveys (CPS) for October of the Bureau of the Census (Bureau of the Census, 1978). The various Current Population Surveys were samples originally drawn to provide reliable data on the U.S. labor force. Present Current Population Surveys extend substantially beyond this original purpose to include data on school enrollments (October).

The October Current Population Surveys are multi-stage, stratified samples of the U.S. population. The first stage involves the division of the U.S. into counties or groups of counties called primary sampling units, which are grouped into homogeneous strata. The stratifying varables (e.g., whether or not the county is within a Standard Metropolitan Statistical Area, percentage of the population employed in manufacturing, average per capita value of retail trade, etc.) were originally selected to maximize the reliability of various labor force estimates. As noted in the earlier discussion of the human capital model, these same labor force attributes also are important to the decision of adults to attend college. Thus estimates of college participation rates from the October CPS are likely to remain fairly reliable.

Within each primary sampling unit selected, a self-weighting probability sample of housing units is developed. According to the Bureau of the Census, a "housing

unit is a group of rooms or a single room, occupied or intended for occupancy as separate living quarters" (Bureau of the Census 1978, p. 15). The major means for representing these housing units is the address register for each of 220,000 enumeration districts in the United States. Clearly, the quality of the survey results is dependent upon the adequacy of this address register (see Appendix A). Based upon this address register, a sample of approximately 60,000 households is drawn.

Table 1 displays the sample sizes and population estimates for each of the seven October Current Population Surveys. From the 60,000 or so households drawn in the survey, data on 139,501 individuals was derived in 1973. Of these 139,501 people, 33,531 were between the ages of 18 and 34, inclusive. (The educational activities of persons over the age of 34 are not reported in the October CPS.) It should be noted that data on the individuals within a sampled household typically is supplied to the interviewer by one person who was at home when the interviewer scheduled the interview. Thus, the accuracy of the data is dependent in part upon the interviewee's knowledge of the activities of each member of the household.

While the sample size is in excess of 33,000 individuals, the Bureau of the Census has developed a set of weights for inflating each sample to an estimate of the current population (Bureau of the Census 1978, Chapter V). These weights, which control for region, sex, and race, are employed without modification in this study. Thus, in 1973, the 33,531 individuals in the survey represented a population of 53,240,000. It should be noted that the Bureau of the Census advises against relying upon data in which there are fewer than 75,000 weighted observations. In this study, weighted sample sizes of less than 75,000 are disregarded.

Table 1

Sample Size and Population Estimates
Current Population Survey
October Supplement

	1973	1974	1975	1976	1977	1978	1979
Total CPS Sample	139501	136608	134898	133697	146209	162116	160666
Sample of 18-34 Year Olds	33531	33777	34089	34947	42297	41905	42121
Estimated Pop. of 18-34 Year Olds (in thousands)	53240	54771	55635	58235	59582	60740	62170

Stratifying Variables

Data in this monograph are disaggregated along five dimensions: region of the country, age, sex, race, and family income level. The operationalization of each of these variables is described in more detail below.

Region of the country was operationalized according to the Bureau of the Census's four-region categorization. These four divisions are Northeast, North Central, South, and West. The states within each of these four divisions are displayed in Table 2.

Table 2

Bureau of the Census Regional Divisions of the United States

Northeast	North Central	South	West
Connecticut	Illinois	Alabama	Alaska
Maine	Indiana	Arkansas	Arizona
Massachusetts	Iowa	Delaware	California
New Hampshire	Kansas	District of Columbia	Colorado
New Jersey	Michigan	Florida	Hawaii
New York	Minnesota	Georgia	Idaho
Pennsylvania	Missouri	Kentucky	Montana
Rhode Island	Nebraska	Louisiana	Nevada
Vermont	North Dakota	Maryland	New Mexico
	Ohio	Mississippi	Oregon
	South Dakota	North Carolina	Utah
	Wisconsin	Oklahoma	Washington
		South Carolina	Wyoming
		Texas	
		Tennessee	
		Virginia	
		West Virginia	

As was indicated in Part I, the regional disaggregation of college participation rates is necessary in order to capture regional differences along a number of dimensions. For instance, a regional disaggregation would control for regional variation in the structure of labor markets. Such structural characteristics

include the industrial mix of a region (i.e., the proportion of jobs in a region in such education-intensive industries as electronics) as well as the more general attributes of employment opportunities and prevailing wage rates. A regional disaggregation would also capture regional variation in college attendance norms, particularly as these norms differentially affect women and minorities.

A person's age is clearly related to the probability of attending college. As noted in the introduction, the major factor precipitating the current concern over college enrollments is the decline in the number of persons in the traditional college-age cohort of 18-21 year olds. Not incidently, this decline has spurred efforts to attract a larger proportion of older adults back into college. Providing a set of indicators surrounding the rate of participation among these older adults may provide the context within which decision-makers can assess the feasibility of offsetting declines in college enrollments among 18-21 year olds by corresponding increases in the rate of participation among older adults.

Two variables were included in order to capture the labor market experiences of men, women, and minorities. As was indicated in the previous section, discriminatory practices have traditionally resulted in lower wage rates and fewer career opportunities for women and minorities, which in turn have reduced college participation among these groups. The 1970s may have marked a turning point in these practices, thereby resulting in increased expectations if not the actual benefits associated with college attendance for women and minorities. In the case of minorities, sample size constraints required a dichotomous split between whites and non-whites.

Finally, a variable was developed to capture college participation among 18-34 year olds from various income levels. The major problem in operationalizing family income levels involved developing a variable that is comparable over time. Compounding this problem was the fact that the family income variable produced by the Bureau of the Census is categorical, with the categories changing over time. Because income distributions for whites and non-whites are substantially different, the solutions to these problems also must take this racial difference into account.

The solution employed in this monograph was as follows. First, Bureau of the Census data on income levels for whites and non-whites were used to develop quartile estimates for each year 1973-1979 (Bureau of the Census, 1973-1979). These quartile estimates are provided in Appendix B. These quartile estimates were then used to recode the family income variable. Specifically, the Bureau of the Census income categorization was recoded according to where the income quartiles fell. For instance, the lowest income quartile for whites in 1973 had an upper limit of $7760 (in current dollars). This limit fell into income category 7 on the October Current Population Survey. Thus, any person coded as 7 or less on his/her income level was placed in the lowest income quartile. A similar procedure was followed for each income quartile across each of the seven years.

Care must be exercised when interpreting the results for this variable. In comparing results across years, one must bear in mind that the actual dollar limits, in current dollars, increase from one year to the next although these dollar limits are relatively constant when deflated by the Consumer Price Index. Attention is thus focused upon the behavior of individuals within various income groups and not upon the dollar value associated with these groups.

In comparing the behavior of whites and non-whites across income levels, two types of interpretation are possible. If the college attendance decision is associated with a particular socio-economic group, then college participation rates for low income whites and non-whites should be approximately equal. If, on the other hand, the college attendance decision is asociated with a particular level of income, then college participation rates for the highest income quartile non-whites should approximate the rates for third quartile whites. The reason for this interpretation is the difference in income distributions for whites and non-whites (see Appendix B). Despite efforts to remove labor market discrimination against non-whites, income distributions for whites and non-whites remain substantially different.

III. Results

As indicated earlier, the October Current Population Surveys are used to determine the number of persons enrolled in postsecondary education in the United States. Due to constraints inherent within the October CPS, this survey reports the education activities of adults 18-34 years of age who were enrolled in what has been traditionally considered an institution of higher education. The results section, however, is divided into two parts. In the first part, estimates of the total number of persons attending a college or university are developed. In the second part, attention is focused upon those who have decided to enroll. Specifically, what proportion of those who have decided to attend college enroll full-time?

(As noted in Appendix A, data also are available on the adult in a two-year vs. a four-year school, and whether the institution was public or private. In order to maintain a monograph of reasonable length, these results are not reported, although they are available from NCHEMS.)

The Decision to Attend College

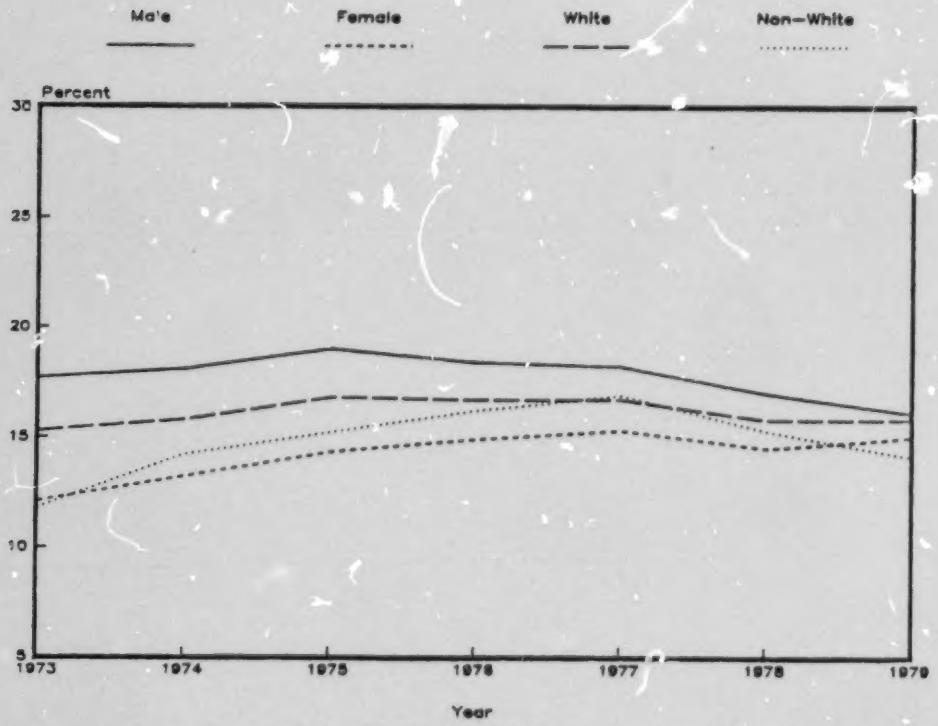
In order to operationalize whether an eligible adult was attending an institution of higher education, item 36 on the October CPS is analyzed. This item asked "what grade or year is (person's name) attending?" The interviewee could respond E1-E9, H1-H4, C1-C6+, or a special school. A person was defined as being "in college" if he/she was reported to be attending C1-C6+. (See Appendix C for a facsimile of these questions for the October CPS.)

Such a definition tends to limit estimates of student participation to enrollment in a traditional college or university. Specifically excluded from the following set of indicators is student involvement in a variety of "special schools" (e.g., proprietary institutions) and in business, technical, vocational, proprietary institutions, or correspondence courses. While some of these "special school" experiences may be postsecondary in educational content, the categories were too broad to exclude the secondary education activities of adults.

Overview. Figure 1 presents the trends in college participation by sex and race. As can be seen from this figure, differences between male and female participation rates have been narrowing over this seven-year period. In 1973, the spread in college participation rates was approximately 5.5 percentage points while in 1979, this difference was reduced to slightly over 1 percentage point. Most of this reduction in the difference between male and female participation rates has been accomplished through increases in the rate of college attendance for women. Such increases may be explained in the removal of sex discrimination practices in the labor force, thereby offering new incentives for women to enter college. Figures 2-5 demonstrate that this pattern of narrowing differences occurred in each of the four geographical regions of the country.

Figure 1

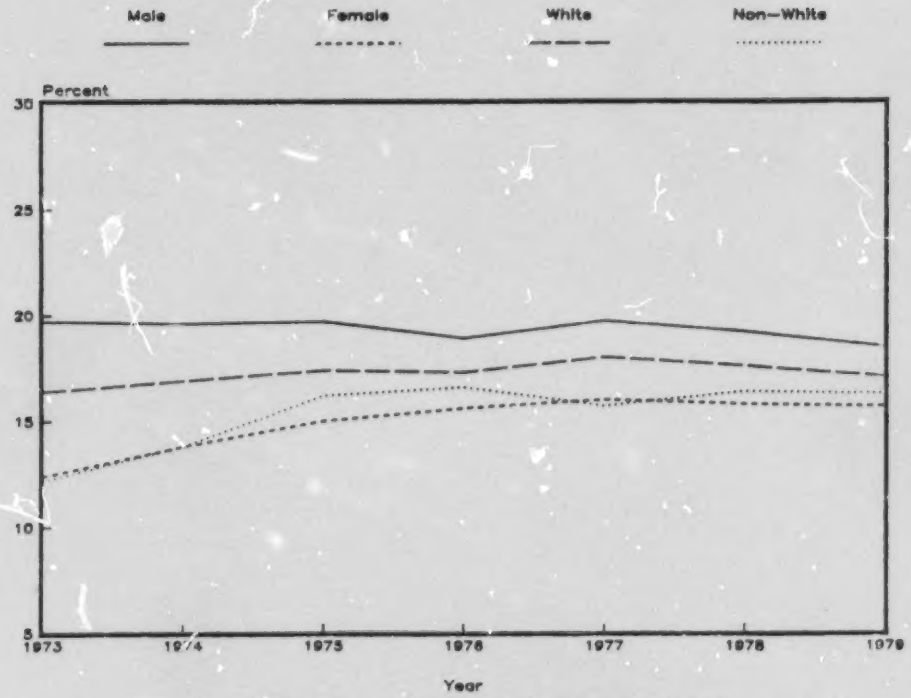
Total Population Participation Rates
by Sex and Race. U.S.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 2

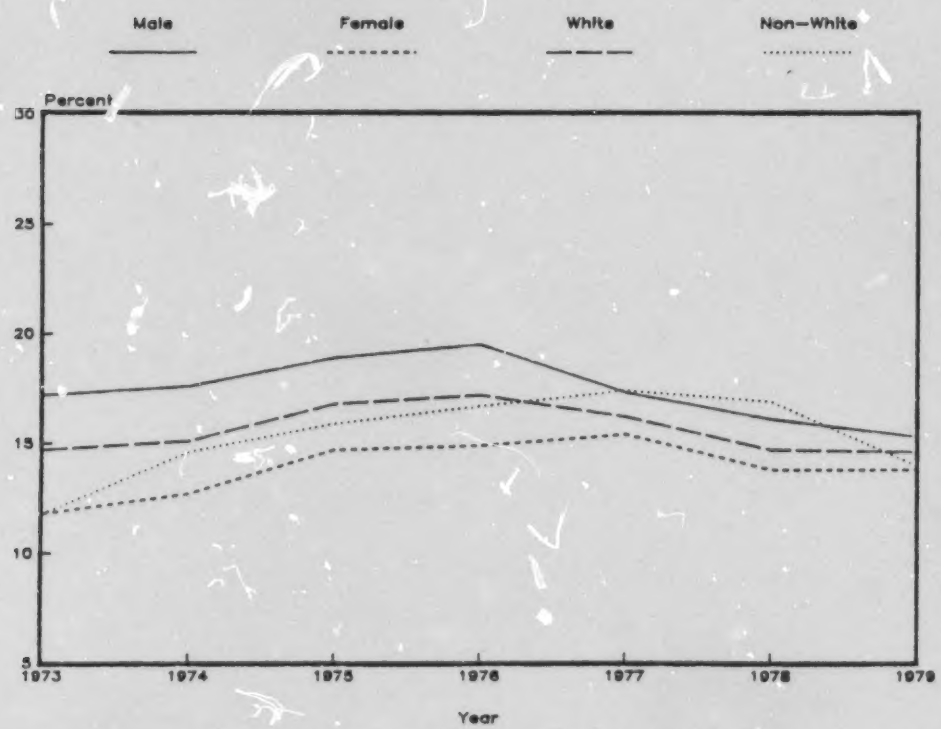
Total Population Participation Rates
by Sex and Race. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 3

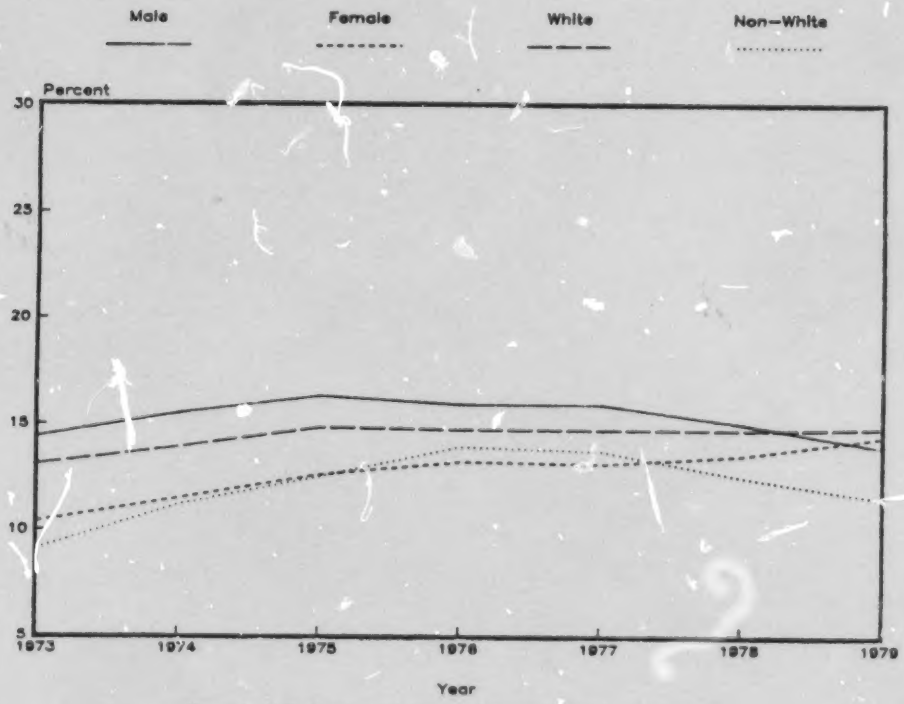
Total Population Participation Rates
by Sex and Race. North Central.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 4

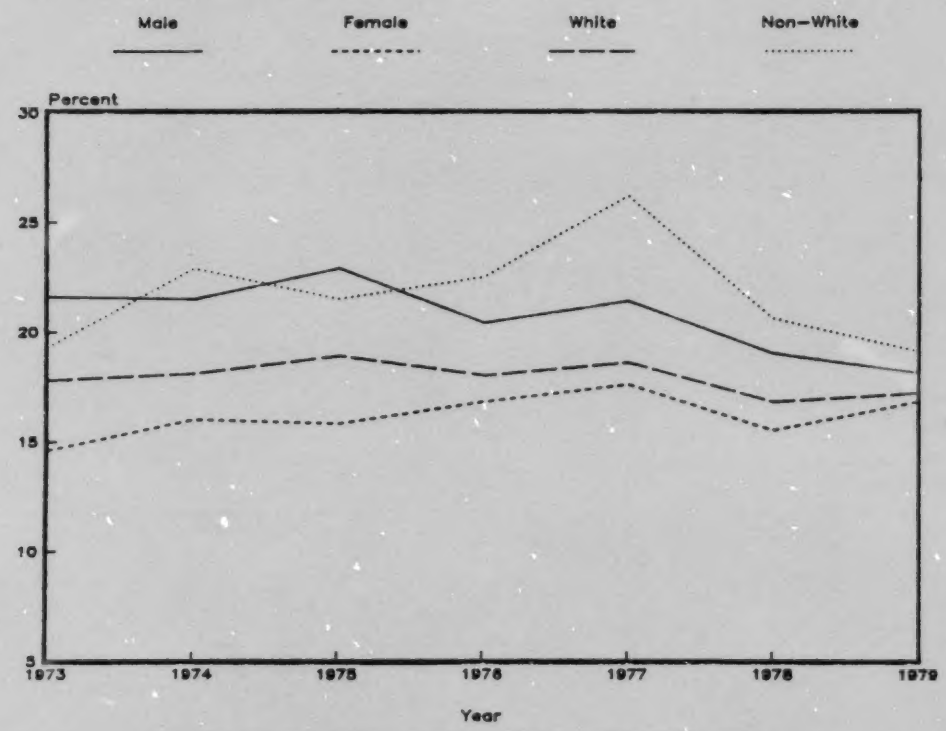
Total Population Participation Rates
by Sex and Race. South.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 5

Total Population Participation Rates
by Sex and Race. West.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 1 also presents the trends in college participation for non-whites. As in the case of males and females, differences in college participation between whites and non-whites have been narrowing over this period. In 1973, this spread was 3.5 percentage points, a spread which was reduced by approximately one-half by 1979. Again, this reduction was accomplished through increases in the rate of college attendance among non-whites, increases which might also be explained by the decline in race discrimination in the U.S. labor market.

Two distinct regional variations from this overall pattern may be noted. First, Figure 4 indicates that this pattern of narrowing differences does not appear to hold in the South. While the overall level of college participation for whites and non-whites has increased over this period, differences between white and non-white participation rates have been reduced by only .7 of a percentage point. Second, while overall participation rates for whites and non-whites are greatest in the Northeast and West, college participation rates for non-whites are higher than for whites in the West. It may be that the attempt by certain states in this region, particularly California, to provide a system of community colleges which are geographically accessible to all segments of the population has served to provide access to large numbers of non-white as well as white students. Also contributing to this reversal in the pattern for other regions may be the influx of large numbers of Asians who view postsecondary education as an important avenue to acculturation and upward social mobility.

Thus, these overall results appear to be consistent with the predictions of human capital economists. Specifically, rates of college participation for women and non-whites have been increasing steadily over this period while the rates for whites and males have generally remained fairly constant. (The increase in college participation rates for these groups in the middle of the decade will be

discussed in more detail below.) The following results will disaggregate these results, first by age and then by income level.

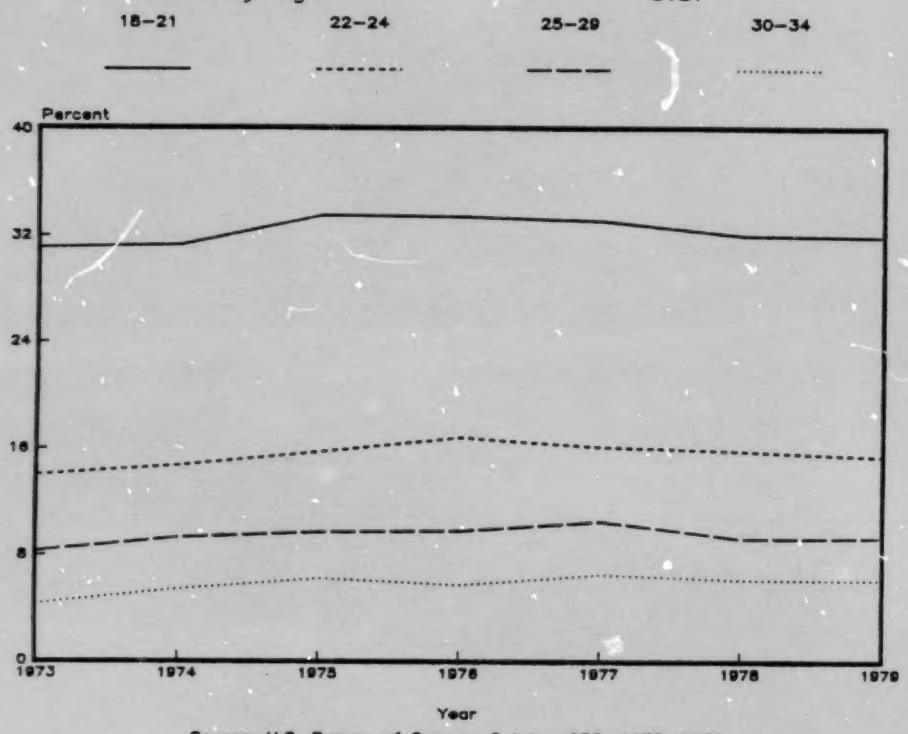
Age Disaggregations. Figure 6 displays the rate of college attendance by age. As expected, the rate of college attendance varies inversely with age with the rate being highest among 18-21 year olds and lowest among 30-34 year olds. Figures 7-10 demonstrate that this pattern is constant across regions of the country.

Despite the demographic decline in the traditional college-age cohort (18-21 year olds), this cohort will continue to provide the bulk of collegiate enrollments in the 1980s and 1990s. For instance, this age cohort provided over 55 percent of the total enrollments in the United States in 1979. When it is further recognized that a relatively constant 90 percent of these students enroll full-time (see below), the importance of this age cohort to the full-time equivalent student enrollments of colleges and universities is apparent. For this reason, and because sample sizes are generally too small in the case of older cohorts to provide reliable estimates, attention will be focused upon the college participation rates for this cohort.

As in the case of 18-34 year olds, differences among 18-21 year old male and female participation rates have been narrowing over this period to a point where they are almost equal. This replication of earlier results would tend to strengthen the earlier finding that the overall rate of growth in college attendance has been faster for women than for men, the latter having actually declined over this period. Again, these results would tend to substantiate Freeman's (1976) predictions for male and female 18-21 year olds. Figures 11-14 present these results for the United States generally and each of the four regions. As in most cases reported in this monograph, the rate of college

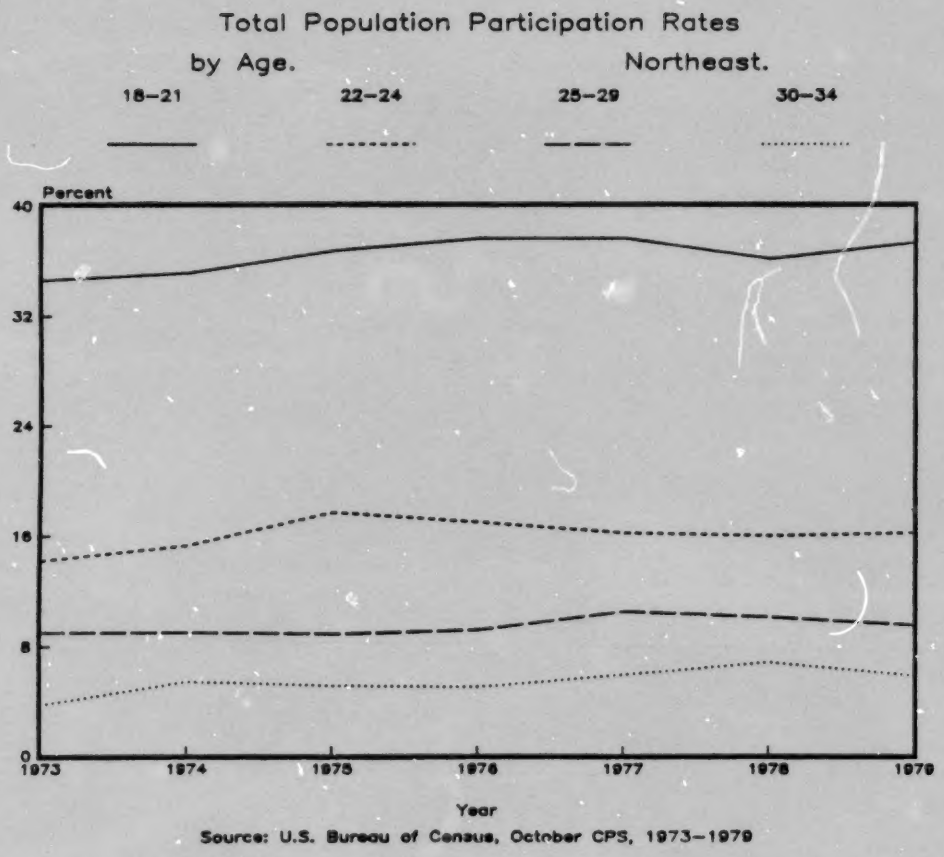
Figure 6

Total Population Participation Rates
by Age. U.S.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 7

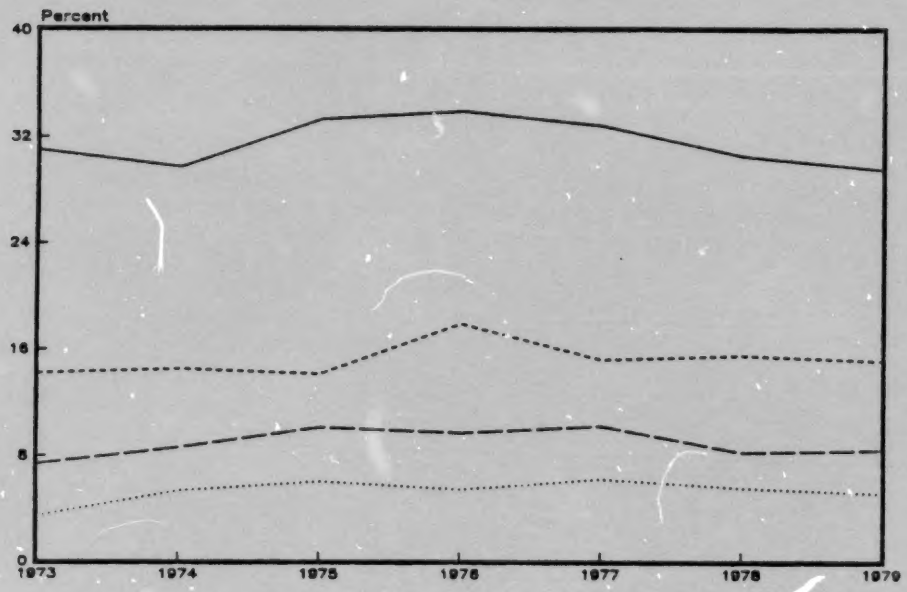


Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 8

Total Population Participation Rates
by Age. North Central.

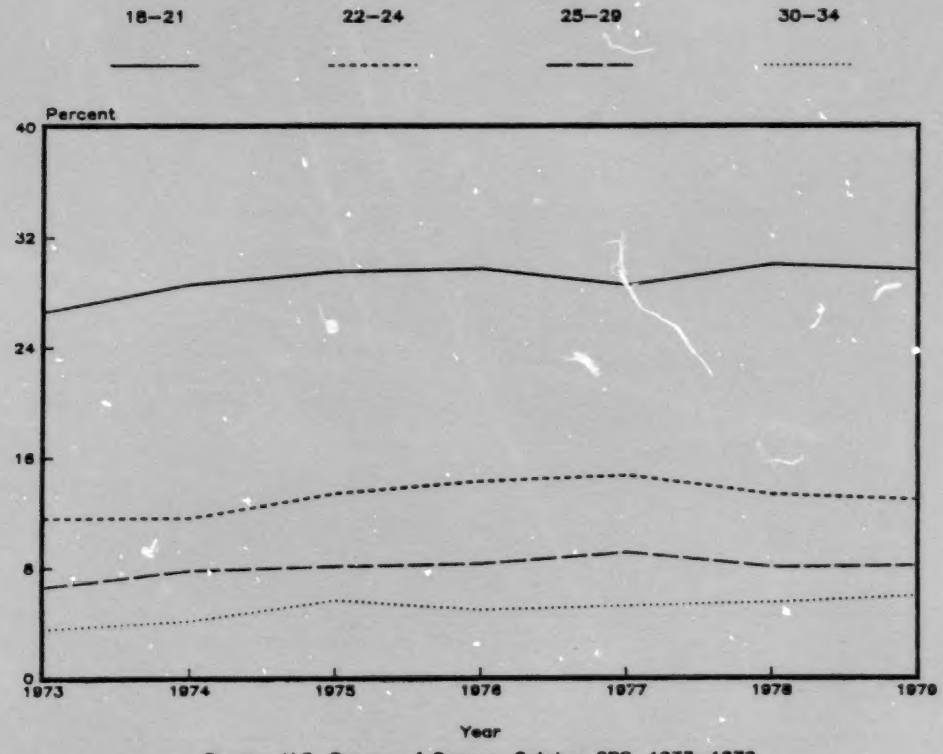
18–21 22–24 25–29 30–34



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 9

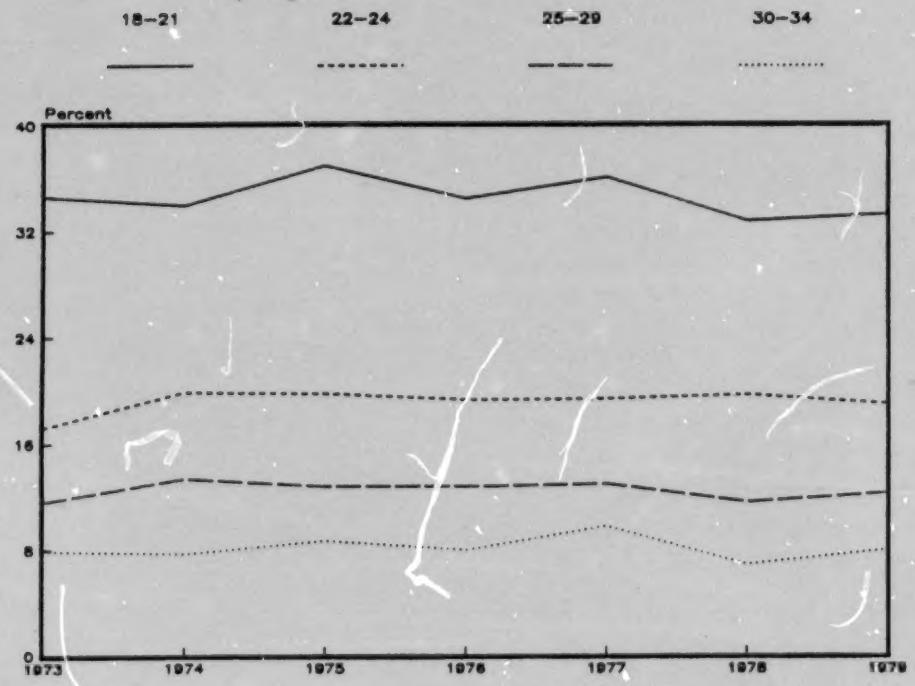
Total Population Participation Rates
by Age. South.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 10

Total Population Participation Rates
by Age. West.



Source: U.S. Bureau of Census, October CPS, 1973–1979

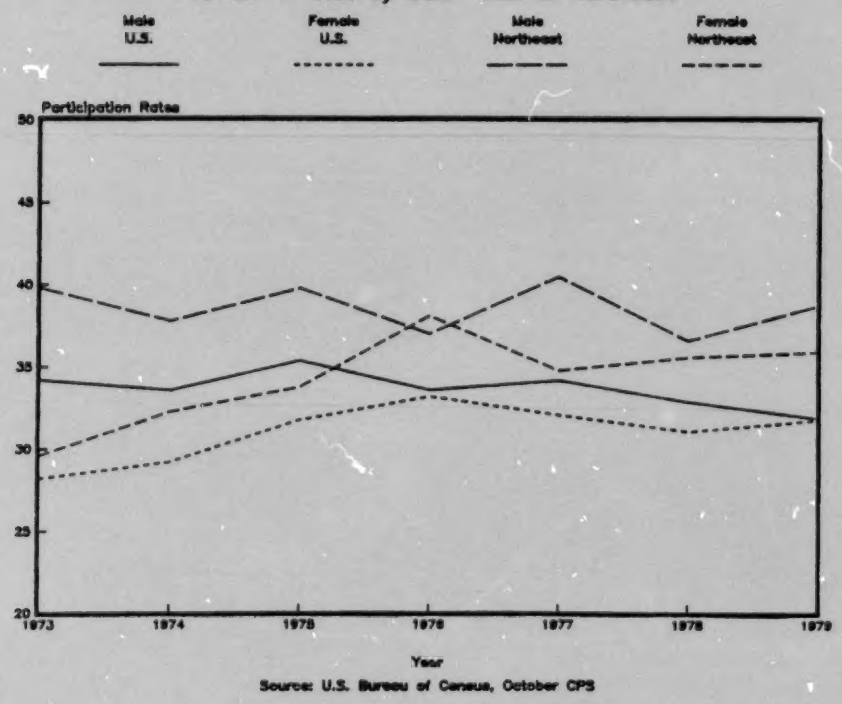
participation is generally highest in the Northeast and West, and lowest in the North Central and South regions.

The pattern for white and non-white college participation rates is not as pronounced. There has been a 3.8 percentage point reduction in the difference in college participation rates between 1973 and 1979 nationally. However, this reduction is less than the reduction for 18-34 year olds. This result would suggest some discontinuities in the pattern of college attendance among non-whites that are not present for whites. More specifically, while the rate of college attendance for 18-34 year old non-whites is approaching that of whites, non-whites are more likely to delay college entry until they are somewhat older. These trends are presented in Figures 15-18.

As before, the West marks a reversal of this pattern: non-white participation rates are higher than white rates for this traditional college-age cohort. It is likely that the reasons postulated for this reversal in the case of 18-34 years also applies to this age-cohort, i.e., a system of geographically accessible community colleges and a rather different composition of the "non-white" category. Moreover, the difference between white and non-white participation rates appears to be increasing despite rather wide fluctuations in the college attendance patterns of non-white students. This widening difference is due primarily to a gradual deterioration in the college-going rates of white 18-21 year olds.

Figure 11

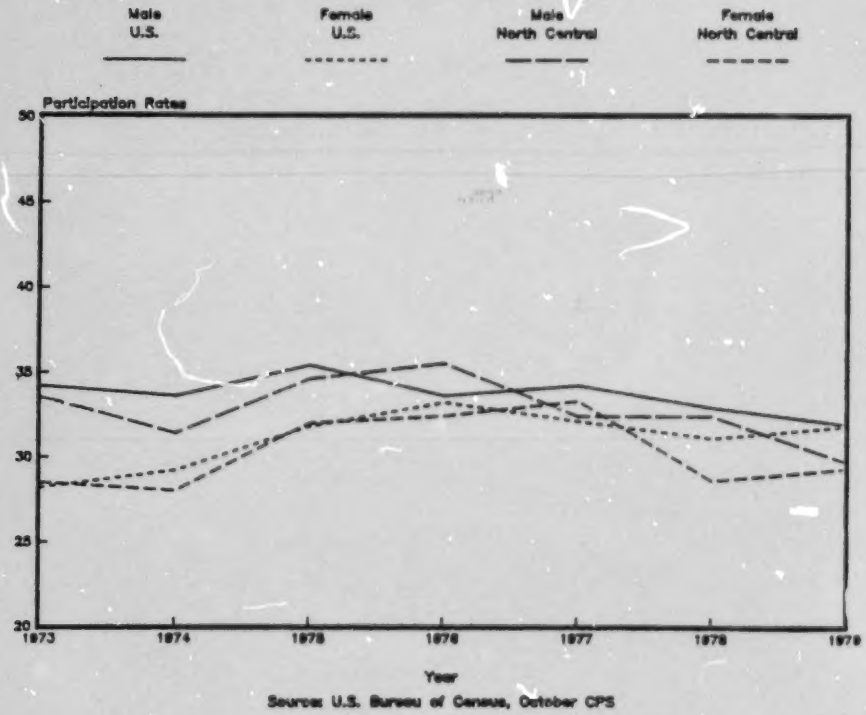
Total Population Participation Rates
18–21 Yr Olds by Sex. U.S. & Northeast



Source: U.S. Bureau of Census, October CPS

Figure 12

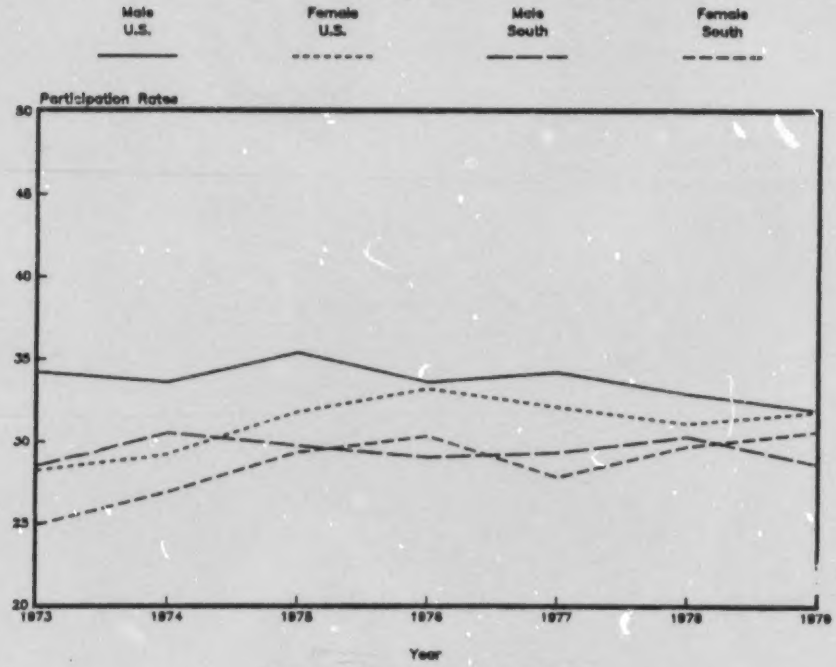
Total Population Participation Rates
18–21 Yr Olds by Sex. U.S. & North Central



Source: U.S. Bureau of Census, October CPS

Figure 13

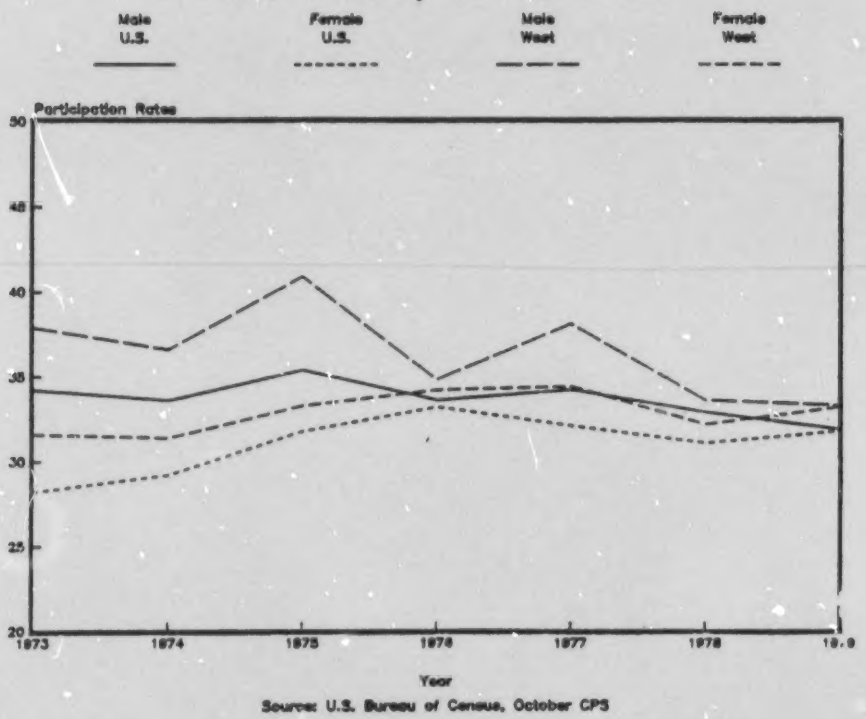
Total Population Participation Rates
18–21 Yr Olds by Sex. U.S. & South



Source: U.S. Bureau of Census, October CPS

Figure 14

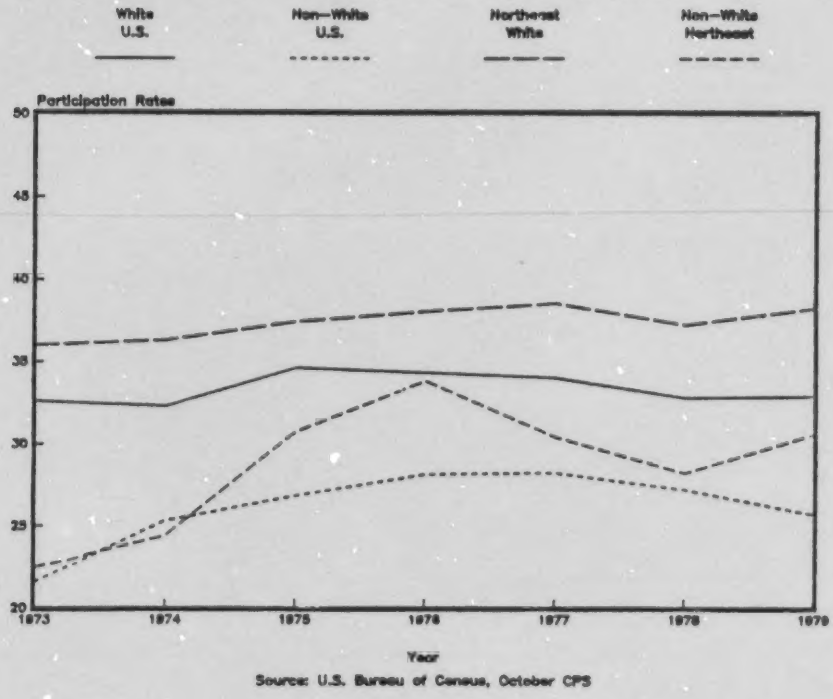
Total Population Participation Rates
18–21 Yr Olds by Sex. U.S. & West



Source: U.S. Bureau of Census, October CPS

Figure 15

Total Population Participation Rates
18–21 Yr Olds by Race. U.S. & Northeast

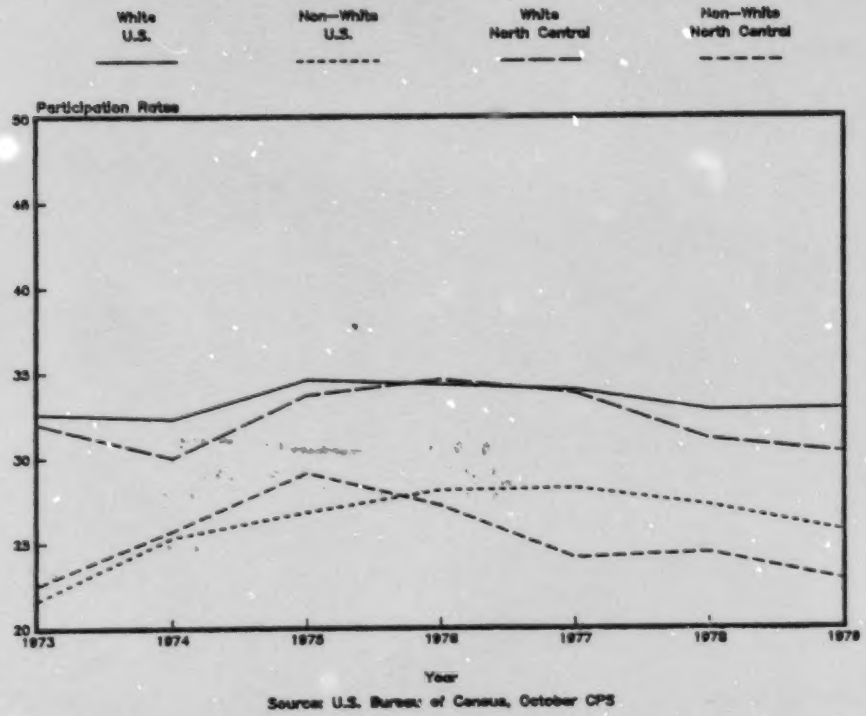


Source: U.S. Bureau of Census, October CPS

Figure 16

Total Population Participation Rates

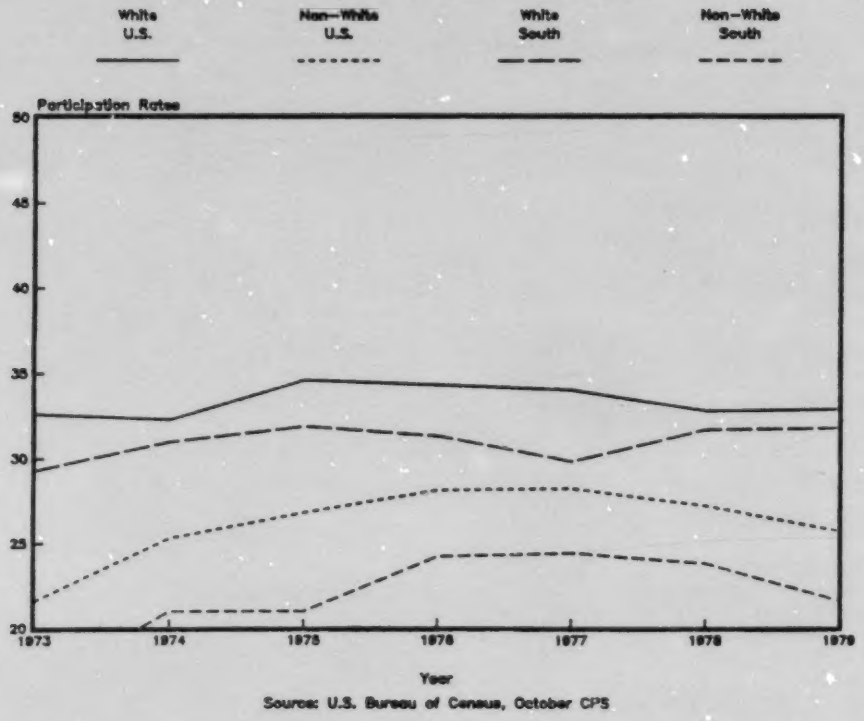
18–21 Yr Olds by Race. U.S. & North Central



Source: U.S. Bureau of Census, October CPS

Figure 17

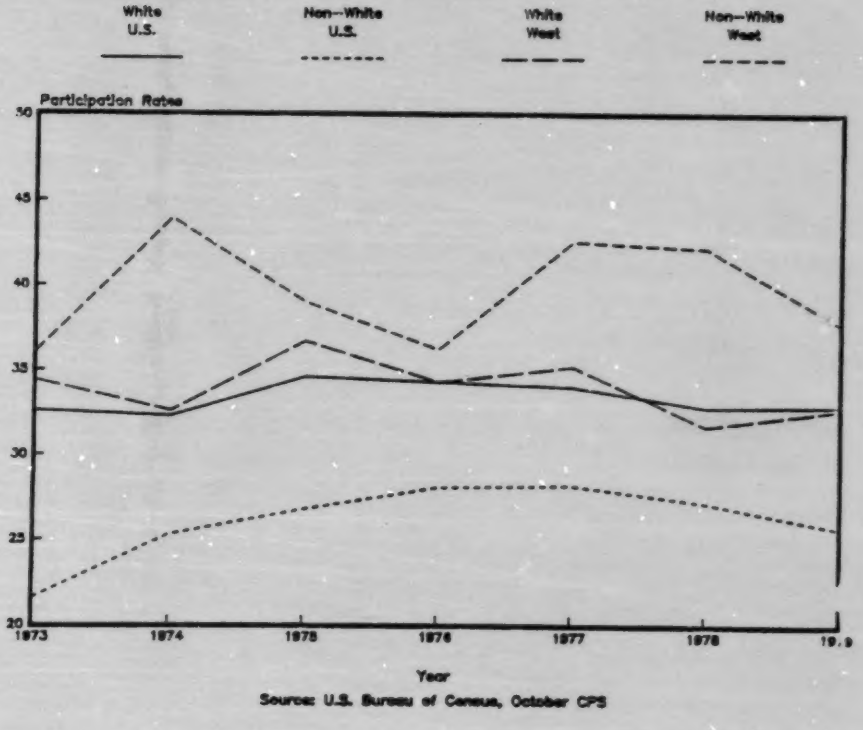
Total Population Participation Rates
18–21 Yr Olds by Race. U.S. & South



Source: U.S. Bureau of Census, October CPS

Figure 18

Total Population Participation Rates
18–21 Yr Olds by Race. U.S. & West



Source: U.S. Bureau of Census, October CPS

Income Disaggregations. Figure 19 presents the trends in college participation by income level. As is clear in this figure, the probability of attending college is directly related to family income level. While the same overall pattern of results is true for each of the four regions, there are several noteworthy variations (see Figures 20-23). Specifically, participation rates among individuals from the highest income quartile remain fairly constant somewhat above 32 percent. The exception to this trend occurs in the West where it has been slightly lower, and dropping in the latter part of the period covered by this study.

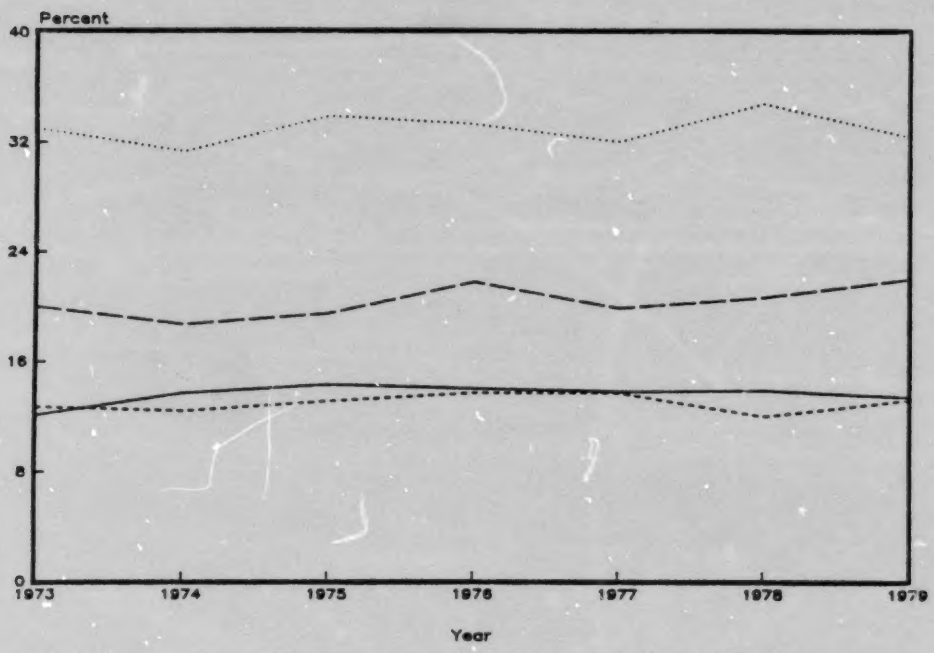
On the other hand, individuals from the lowest income quartile in the West participate in postsecondary education at a somewhat greater rate than their counterparts in other regions. This result again suggests the important role played by the system of community colleges in this region generally and California in particular. It should be noted that over half of the students in the West are enrolled in two-year institutions, a proportion that far exceeds that for any other region. (See Table 2 in Appendix A.)

For purposes of further analysis, the rates of participation for men and women from the lowest and highest income quartiles are presented in Figures 24-28. In the total population, participation rates among high income men and women were both fairly constant and approximately equal. This trend holds for each of the four regions except the South. On the other hand, participation rates among men and women from low income families have been narrowing over this period, primarily through an increase in the rate of collegiate enrollment among low income females. When coupled with the preceding results (i.e., the age disaggregations), one is led to the conclusion that the narrowing in

participation rates has occurred predominately among women from low income families.

Figure 19

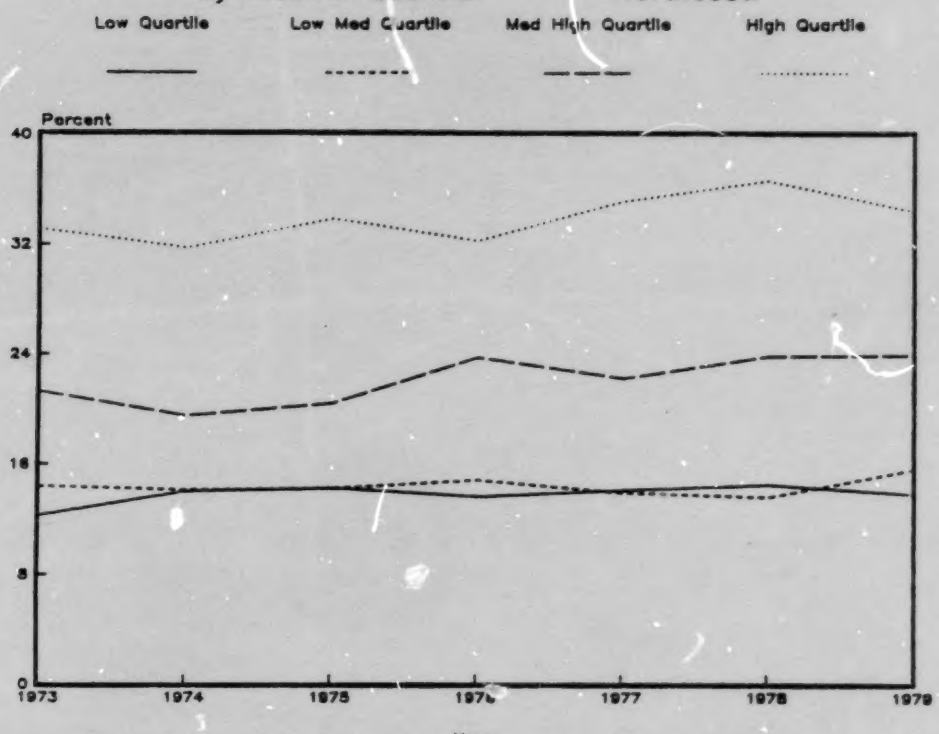
Total Population Participation Rates
by Income Quartile. U.S.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 20

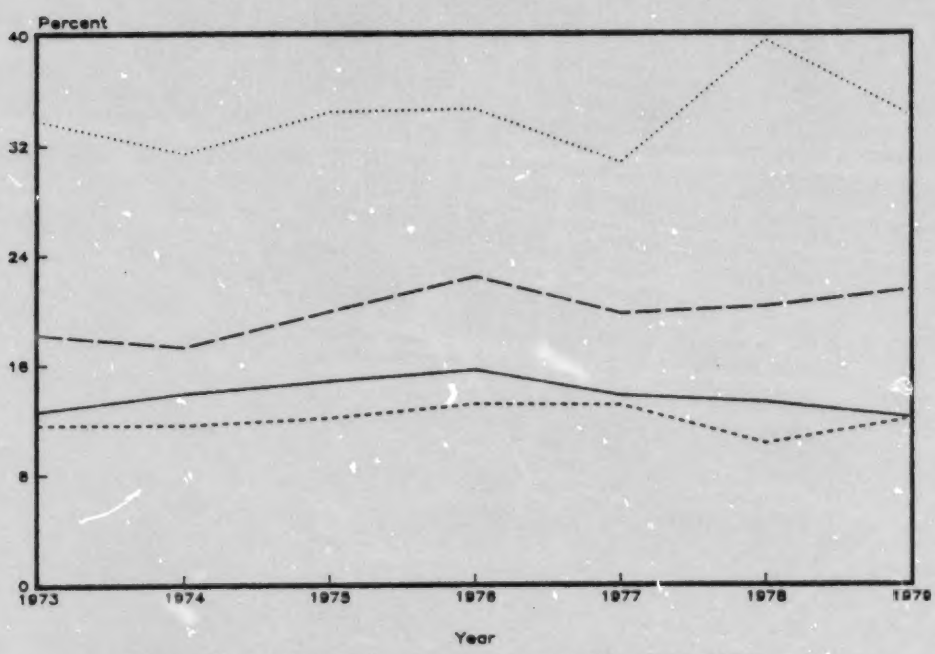
Total Population Participation Rates
by Income Quartile. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 21

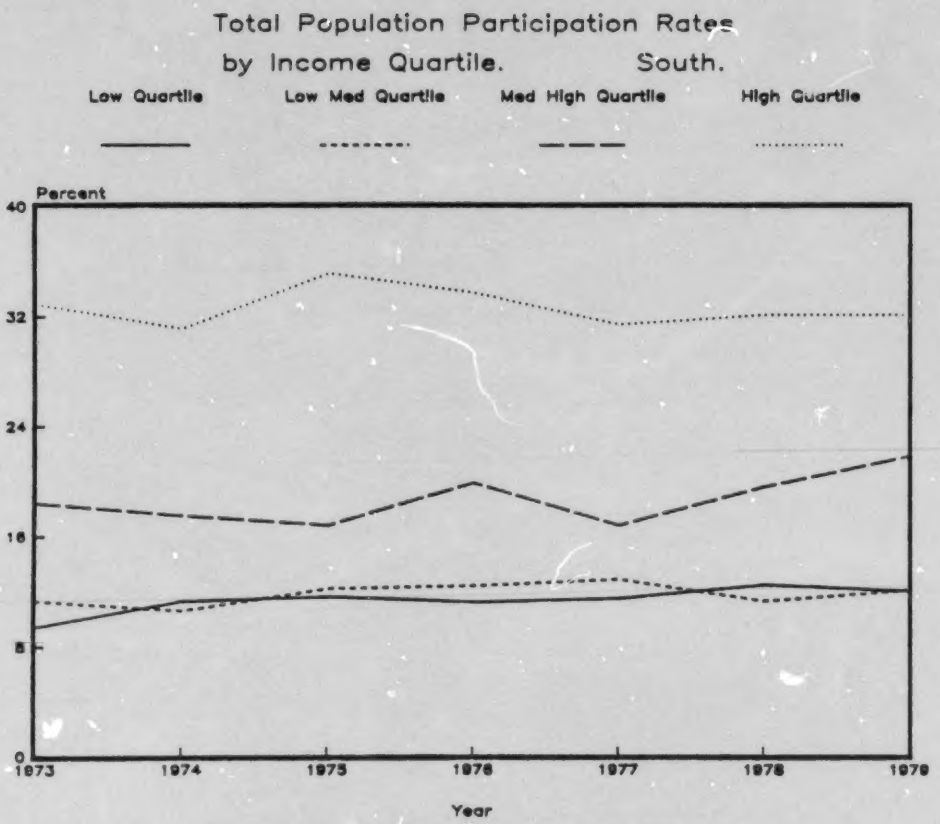
Total Population Participation Rates
by Income Quartile. North Central.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 22

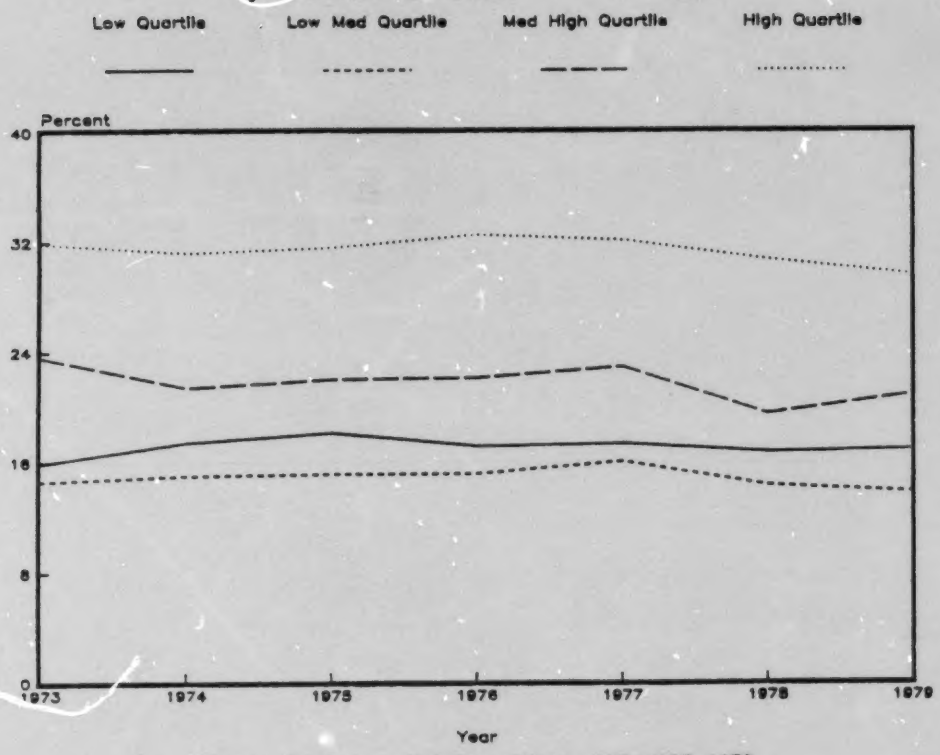
Total Population Participation Rates
by Income Quartile. South.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 23

Total Population Participation Rates
by Income Quartile. West.



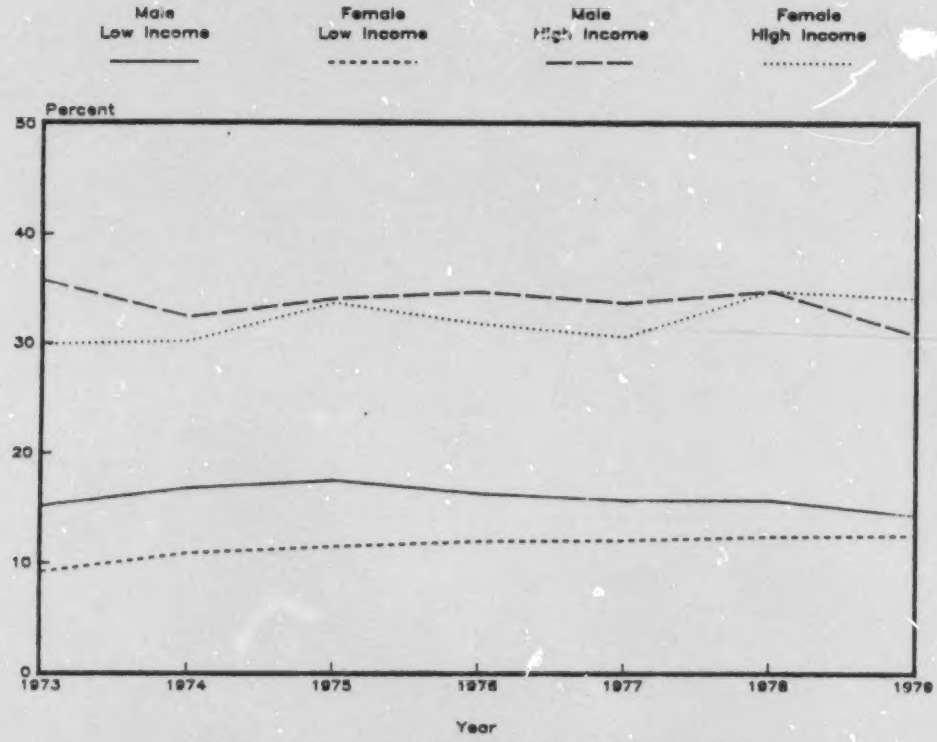
Source: U.S. Bureau of Census, October CPS, 1973–1979

The exception noted above for the high income, male-female participation rates is particularly interesting (Figure 27). With the exception of 1977, high income female participation rates exceed those for men. This reversal of national patterns would suggest a strong regional variation in college attendance norms. Specifically, while high income males in the South may have several acceptable options upon graduation from high school, high income females do not. This possible explanation does not imply, however, that these women are attending "white-glove" institutions.

Finally, Figure 29 displays the rates of college participation among whites and non-whites from various income quartiles. Due to small sample sizes, regional disaggregations of these data would be unreliable and are not presented. Several conclusions emerge from this figure. First, the rates of college participation among whites and non-whites from low income families is approximately equal. Second, the decision to enroll for non-whites, in the highest income quartile for non-whites, fluctuates around the college participation rates for the third highest income quartile whites. This finding would indicate that the actual dollar income of a family effects the decision as to whether or not to enroll in college as distinct from where one's family is located relative to his/her socioeconomic origins. It would appear that variation in the collegiate enrollment rates of whites and non-whites is due to inequality in the distribution of family income among whites and non-whites.

Figure 24

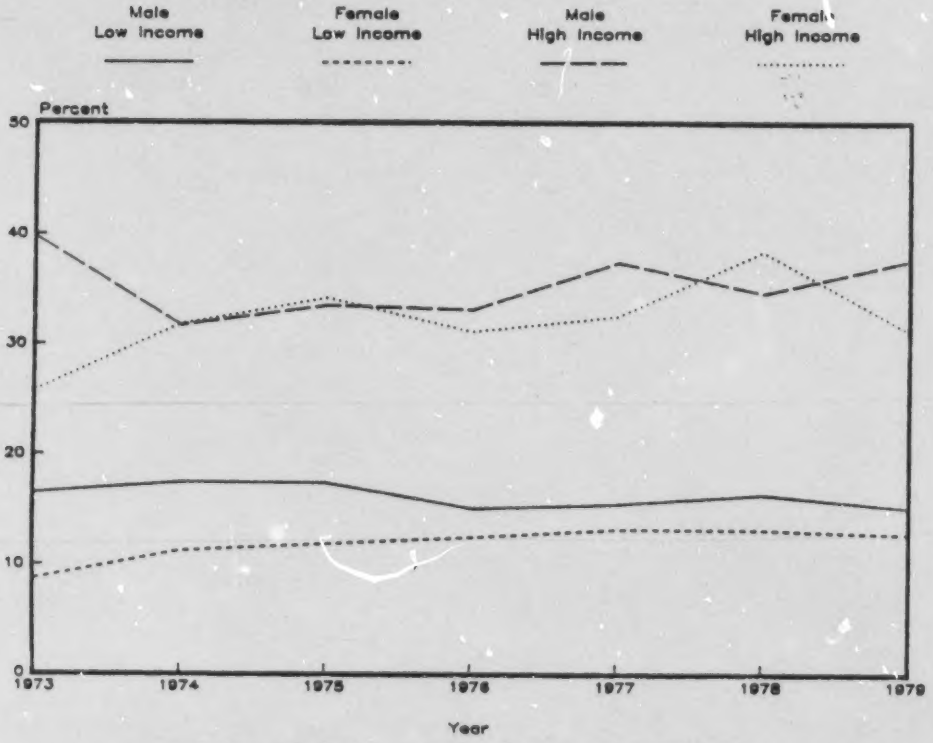
Total Population Participation Rates
by Income Quartile & Sex. U.S.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 25

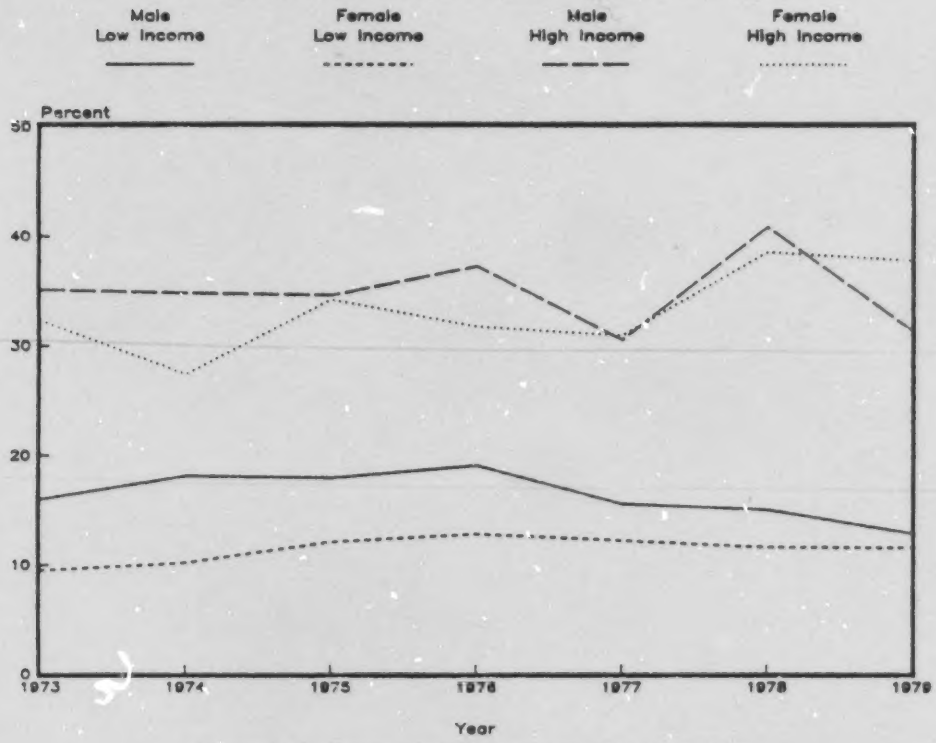
Total Population Participation Rates
by Income Quartile & Sex. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 26

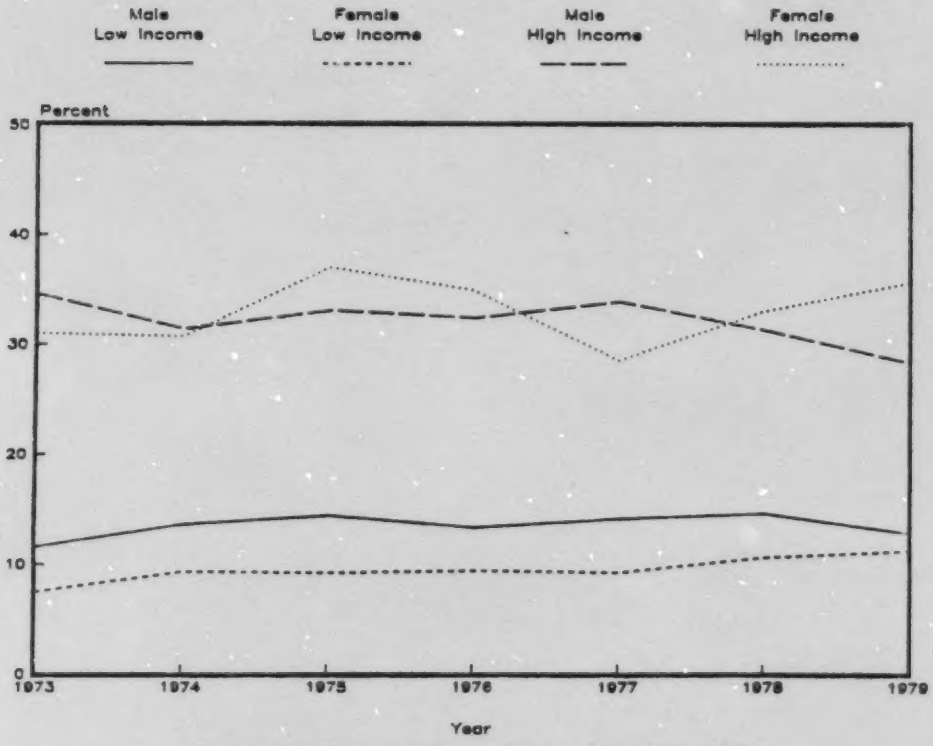
Total Population Participation Rates
by Income Quartile & Sex. North Central.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 27

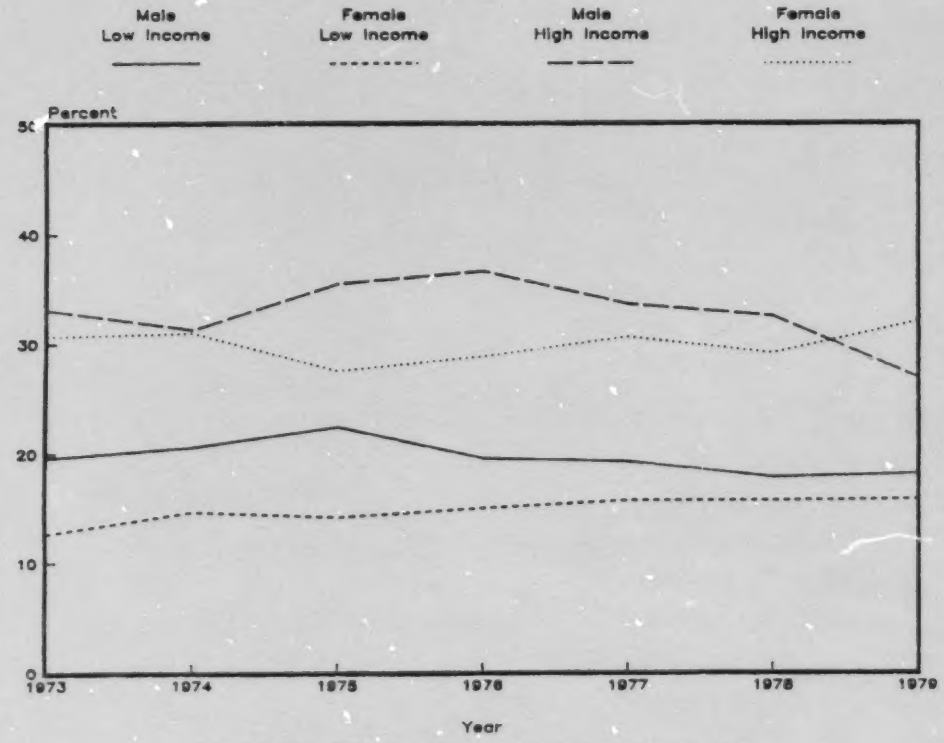
Total Population Participation Rates
by Income Quartile & Sex. South.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 28

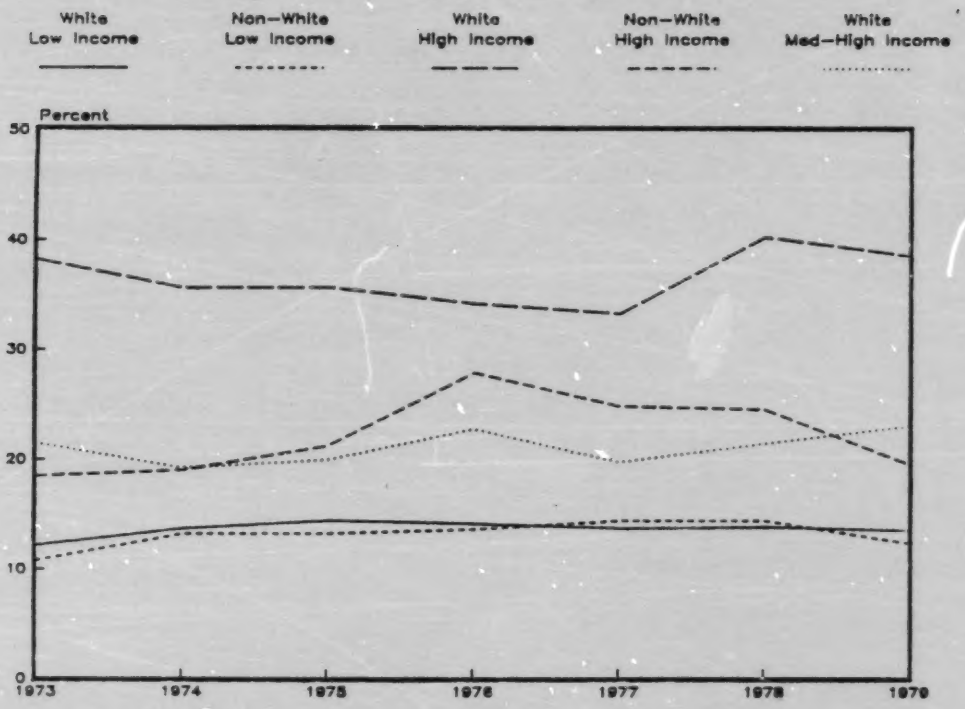
Total Population Participation Rates
by Income Quartile & Sex. West.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 29

Total Population Participation Rates
by Income Quartile & Race. U.S.



Source: U.S. Bureau of Census, October CPS, 1973-1979

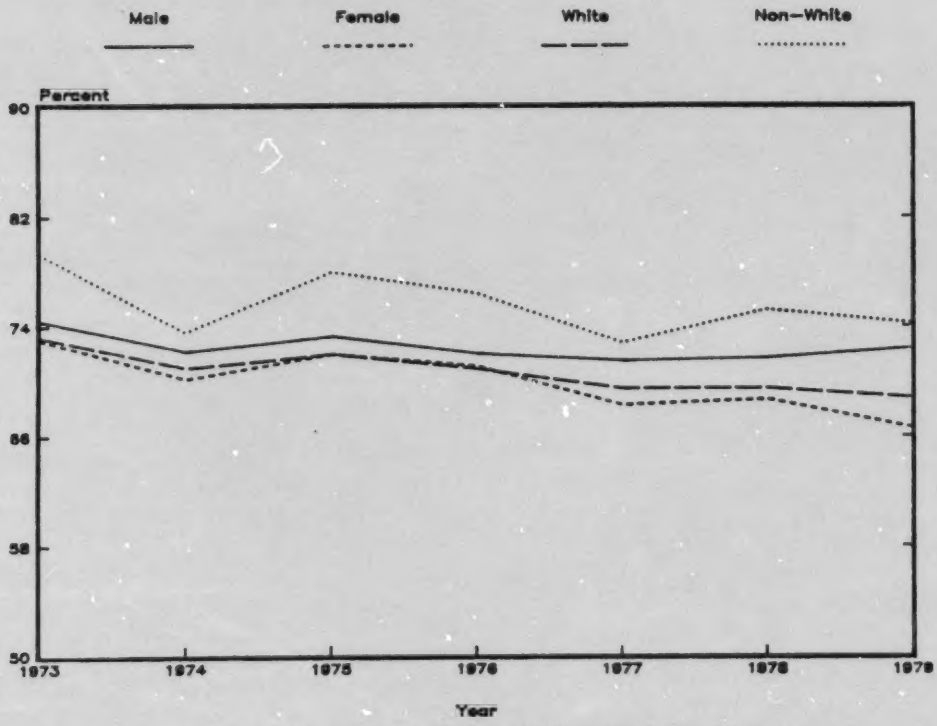
The Decision to Attend Full-Time

Overview. For those adults who indicated involvement at some level in traditional higher education, it is possible to characterize the nature of this involvement as either full-time or part-time. Provision of these enrollment status indicators provides the second necessary element in determining the full-time equivalent enrollment pool for the period 1973-1979. Figure 30 presents the rate at which men and women who decide to go to college do so on a full-time basis. From this figure, it is apparent that there is an increasing divergence between the full-time rates for men and women over this period. Specifically, the difference in full-time rates in 1973 was approximately 1.5 percentage points. By 1979, this difference had increased to almost 6 percentage points. This increasing divergence may indicate that while rates of college participation have been increasing among women over this period, more older women are included now than before. Because this latter group of women have other responsibilities, they are less able to attend college full-time. This pattern appears to hold in all but the Northeast region (see Figures 31-34).

Figure 30 also presents the full-time attendance rates for whites and non-whites. Non-whites are more likely to be attending full-time than are whites. This pattern holds in every region, and with the exception of one year in the North Central region, holds for every year covered by this study. Thus, while non-whites are less likely to go on to college, they are more likely to go on full-time. Further, the rates of full-time attendance appear to be more volatile than for whites, suggesting that full-time rates among non-whites are more sensitive to changes associated with business cycles.

Figure 30

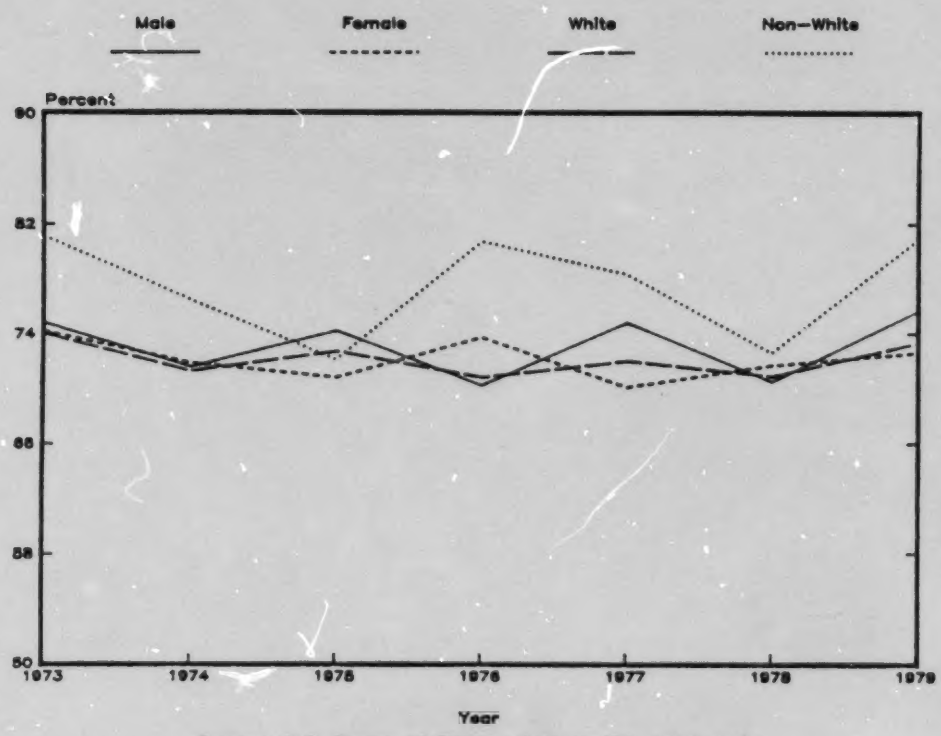
Full-Time Student Participation Rates
by Sex and Race. U.S.



Source: U.S. Bureau of Census, October CPS, 1973-1978

Figure 31

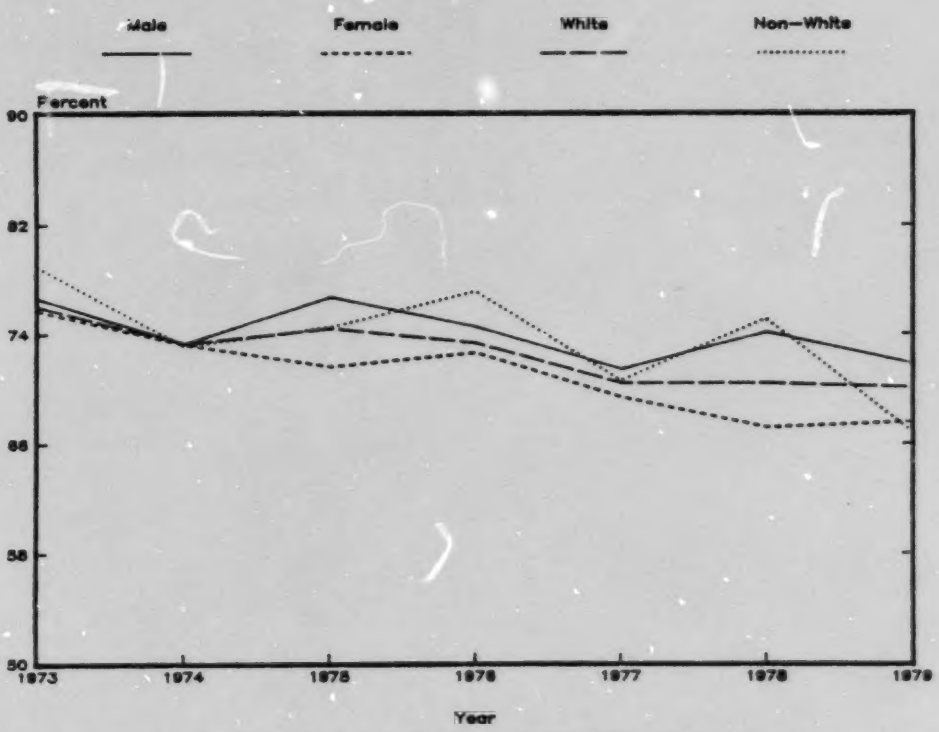
Full–Time Student Participation Rates
by Sex and Race. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 32

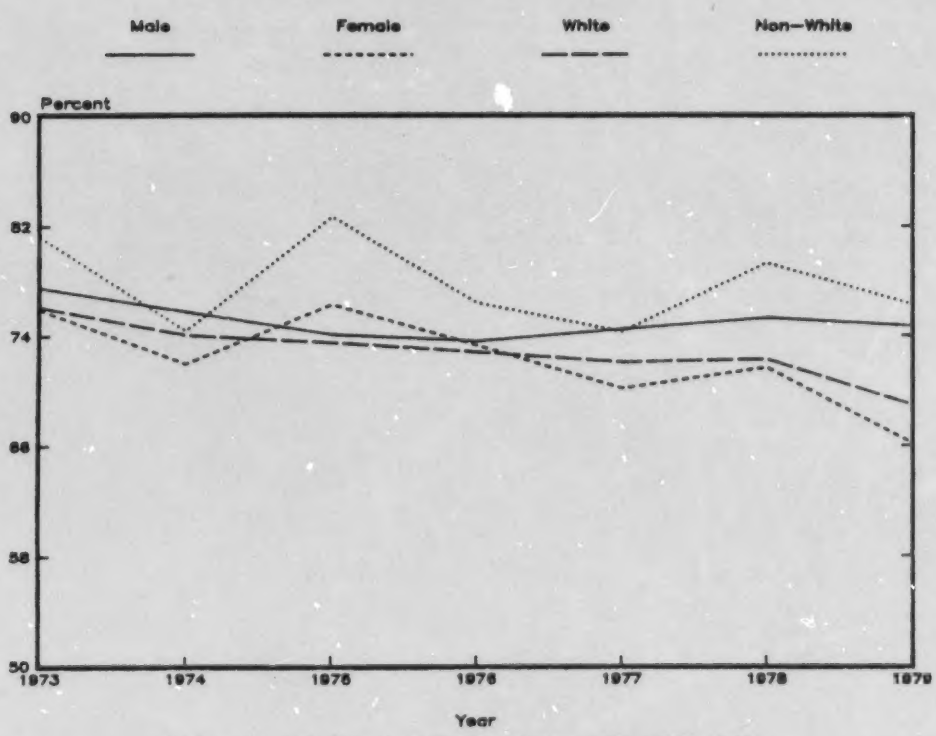
Full-Time Student Participation Rates
by Sex and Race. North Central.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 33

Full—Time Student Participation Rates
by Sex and Race. South.

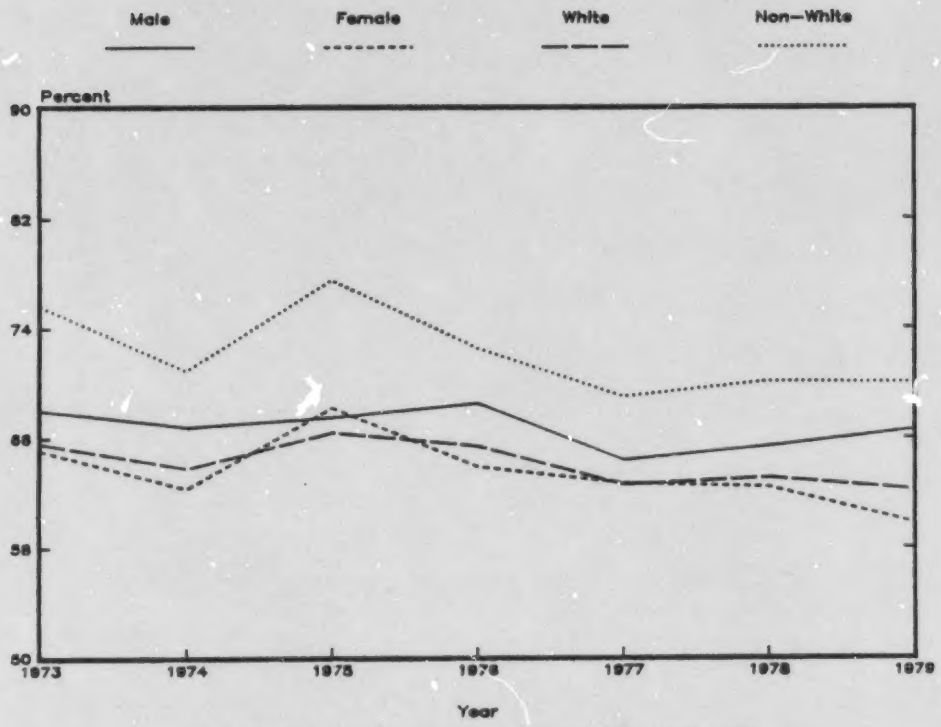


Source: U.S. Bureau of Census, October CPS, 1973—1979

62

Figure 34

Full-Time Student Participation Rates
by Sex and Race. West.



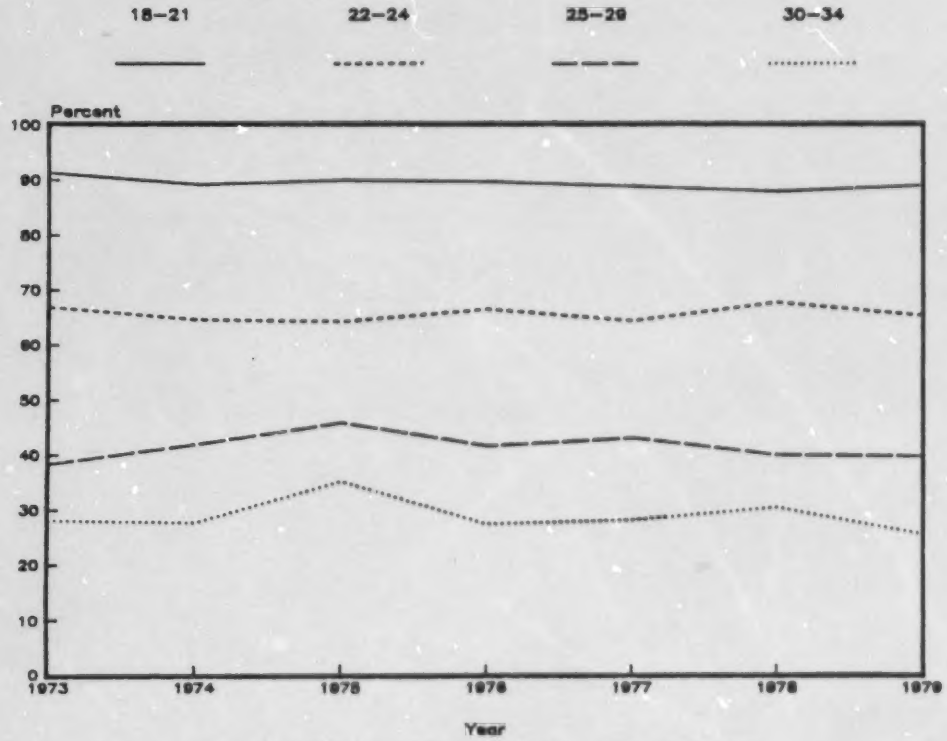
Source: U.S. Bureau of Census, October CPS, 1973-1979

Age Disaggregations. When the rates of full-time attendance are disaggregated by age, the expected pattern results; the younger the student, the more likely he/she is to attend full-time. Figures 35-39 indicate that this pattern is true for every region and for every year in the study. Among 18-21 year-old students, the rate of full-time attendance has remained fairly constant at slightly over 90 percent of those persons attending college. The one notable exception to this 18-21 year old pattern is in the West (Figure 39), where the rate of full-time attendance is somewhat lower. This pattern again suggests the role of community colleges in the college attendance patterns of this region. For older adults, it appears that these persons are also more sensitive to changes in the business cycle than the adults in the traditional college-age cohort. As is the case of non-whites, it appears that as the unemployment associated with the business cycle increases (e.g., as in 1975), the probability of attending college full-time increases. Such a pattern is readily explained by the human capital model in which an increase in unemployment would lower the opportunity cost of attending college full-time and consequently, people would be more likely to do so.

Despite the relative stability of full-time attendance rates among 18-21 year olds, further analysis would shed some light on the overall results presented earlier. When the male and female full-time attendance rates are compared for this age cohort, it is apparent that males are slightly more likely to attend full-time than are females. (It is important to note, however, that the scale on the vertical dimension for Figures 40-47 is much more narrow than in the preceding figures. As a result, very small differences in attendance patterns are likely to appear as large effects. However, it should also be noted that a one percentage point change in the rate of full-time attendance on the part of males would affect approximately 20,000-25,000 individuals in 1973.) While males

Figure 35

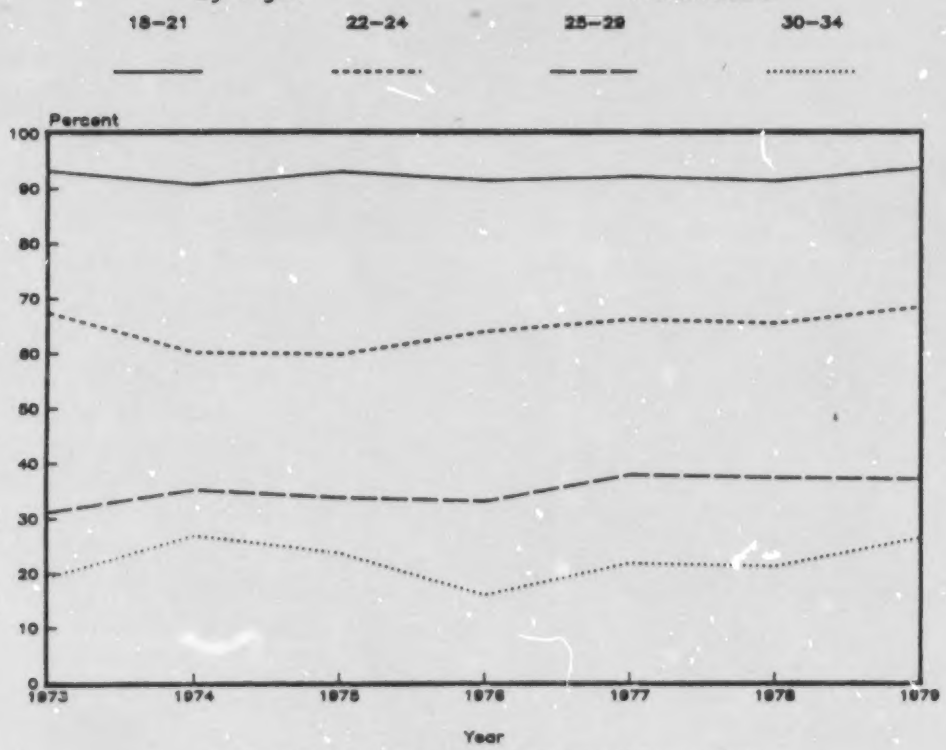
Full-Time Student Participation Rates
by Age. U.S.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 36

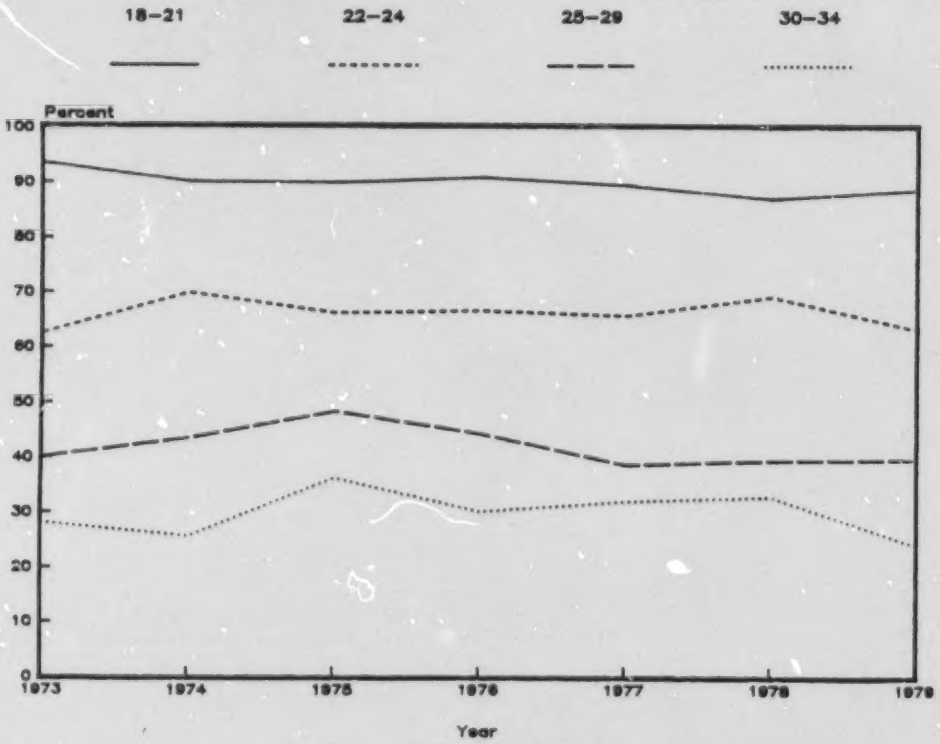
Full—Time Student Participation Rates
by Age. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 37

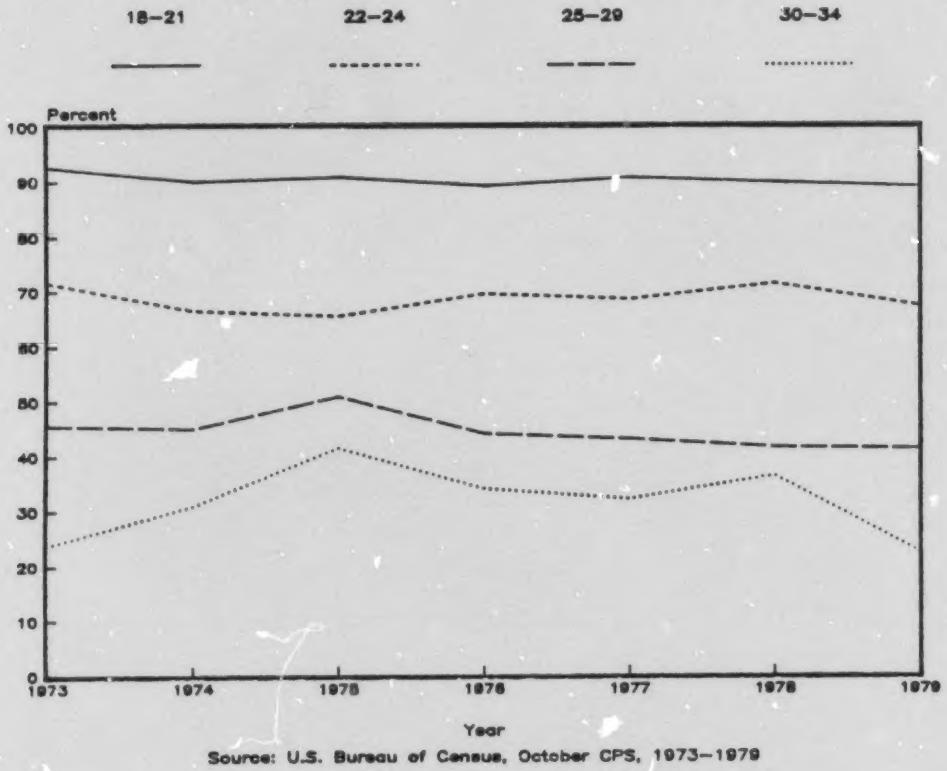
Full-Time Student Participation Rates
by Age. North Central.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 38

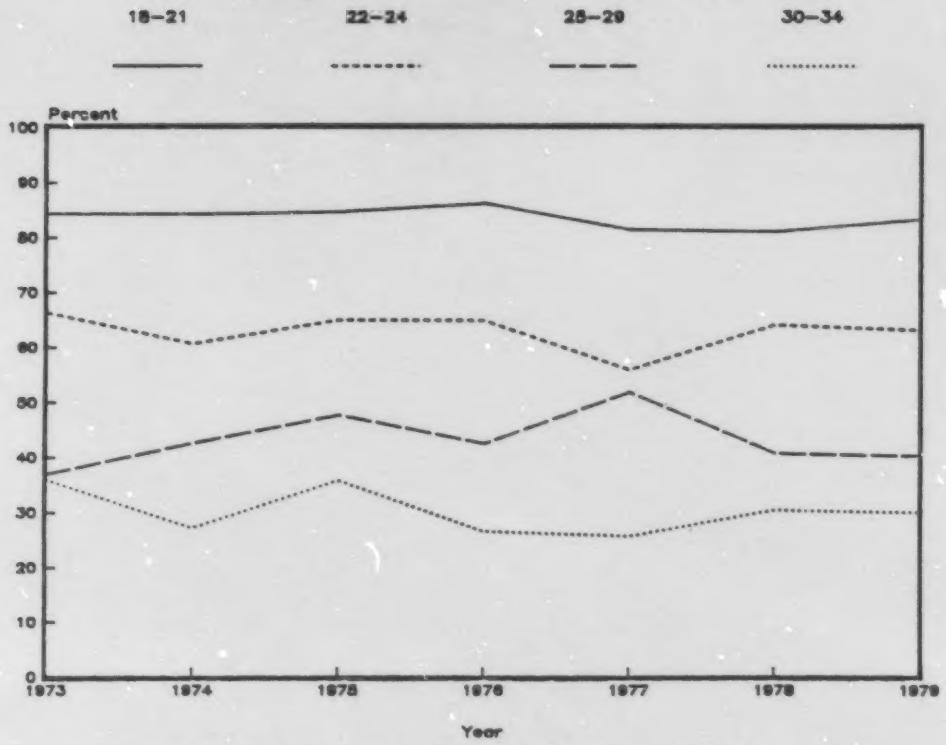
Full-Time Student Participation Rates
by Age. South.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 39

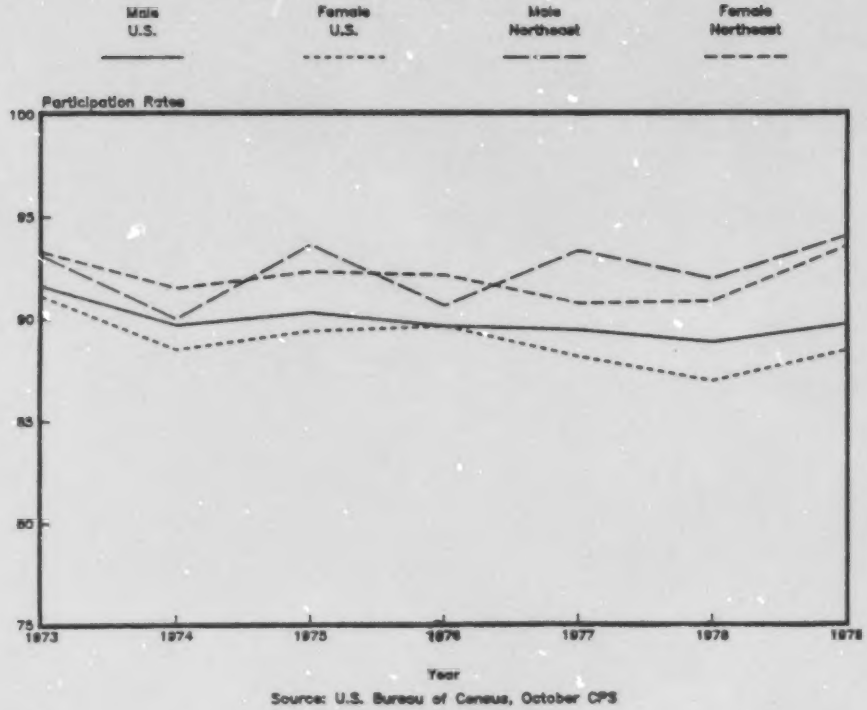
Full–Time Student Participation Rates
by Age. West.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 40

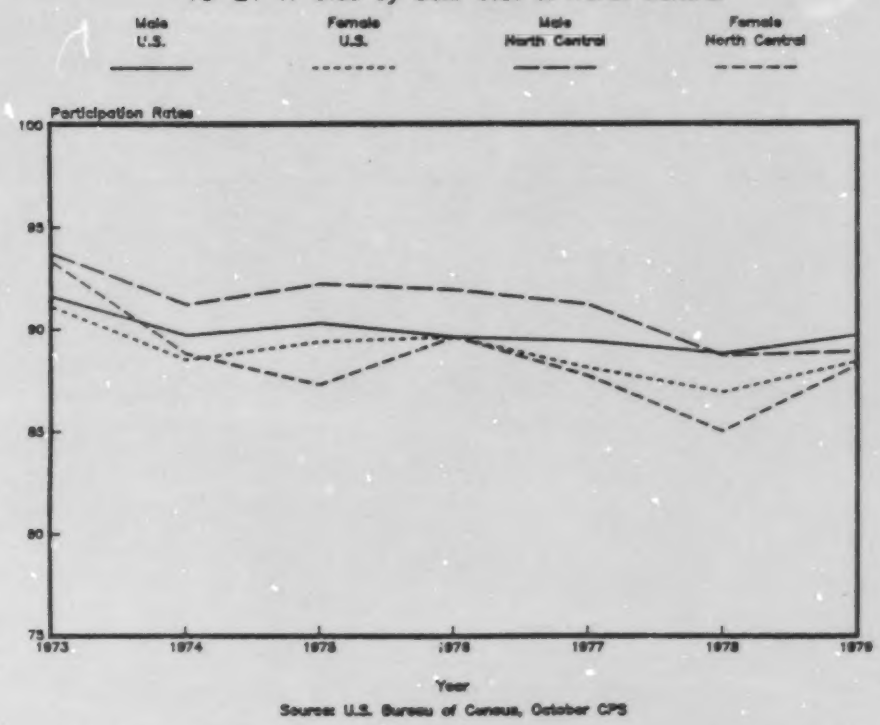
Full-Time Student Participation Rates
18-21 Yr Olds by Sex. U.S. & Northeast



Source: U.S. Bureau of Census, October CPS

Figure 41

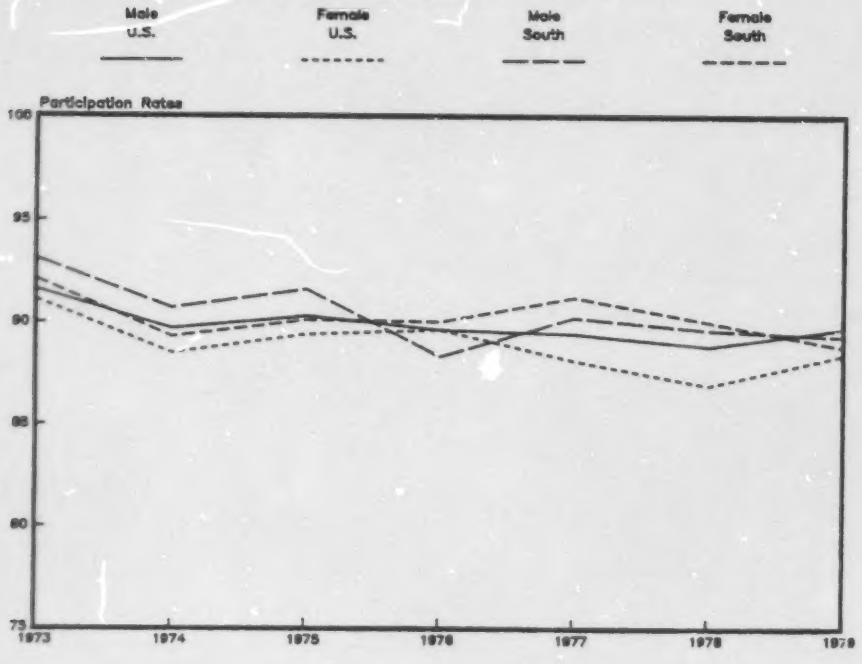
Full-Time Student Participation Rates
18-21 Yr Olds by Sex. U.S. & North Central



Source: U.S. Bureau of Census, October CPS

Figure 42

Full-Time Student Participation Rates
18-21 Yr Olds by Sex. U.S. & South

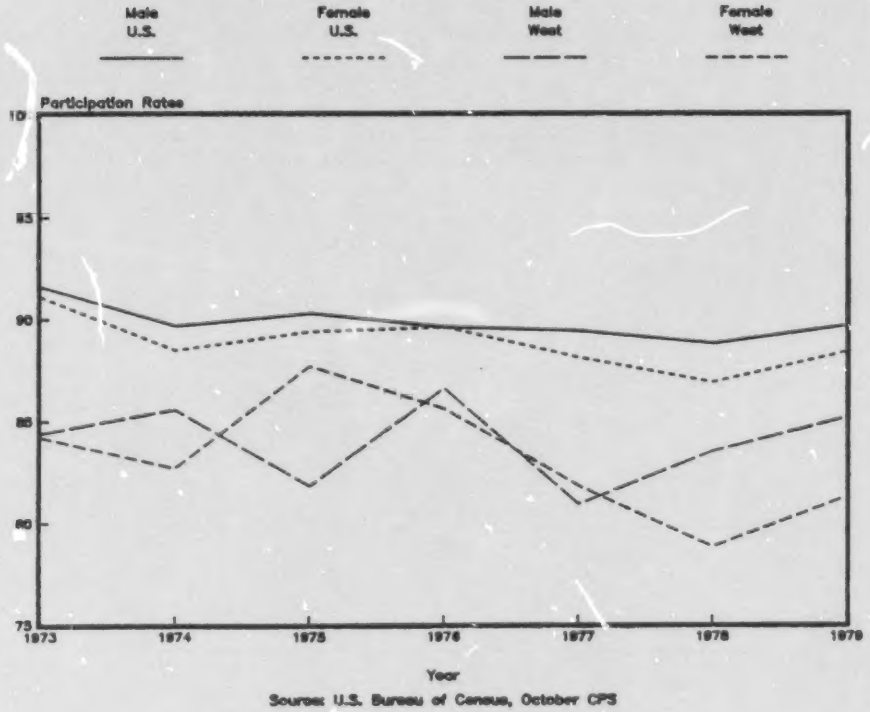


Source: U.S. Bureau of Census, October CPS

72

Figure 43

Full-Time Student Participation Rates
18-21 Yr Olds by Sex. U.S. & West



Source: U.S. Bureau of Census, October CPS

Figure 44

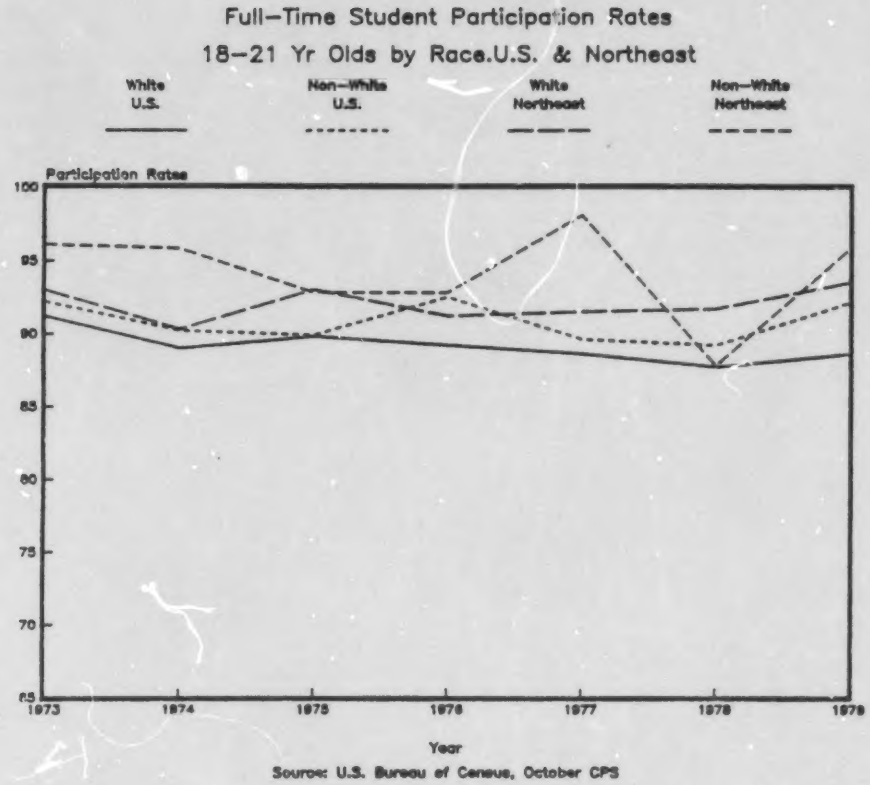
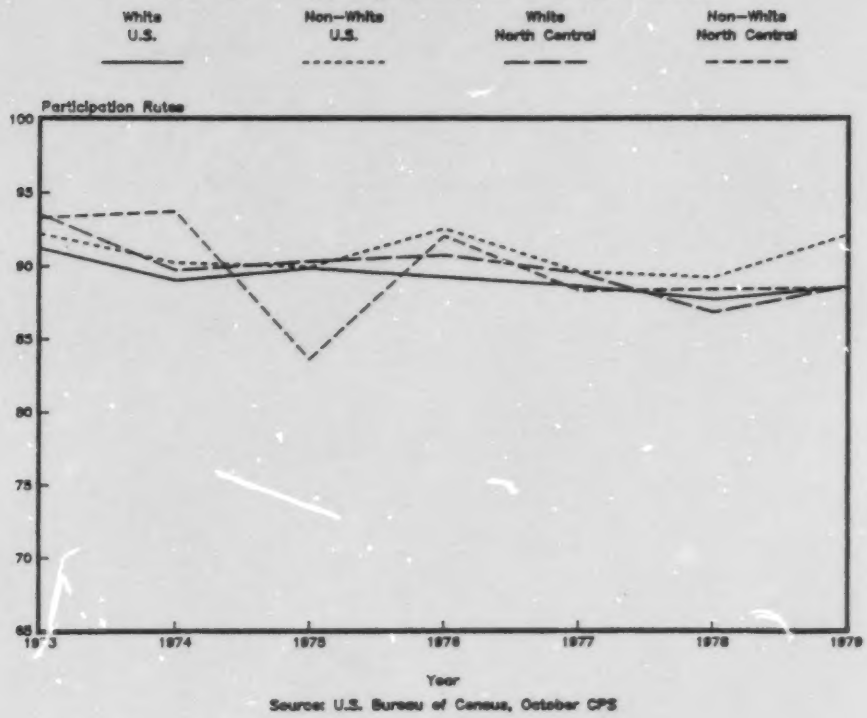

Full-Time Student Participation Rates
18-21 Yr Olds by Race.U.S. & Northeast
White U.S.
Non-White U.S.
White Northeast
Non-White Northeast
Participation Rates
100
95
90
85
80
75
70
65
1973
1974
1975
1976
1977
1978
1979
Year
Source: U.S. Bureau of Census, October CPS

Figure 45

Full-Time Student Participation Rates

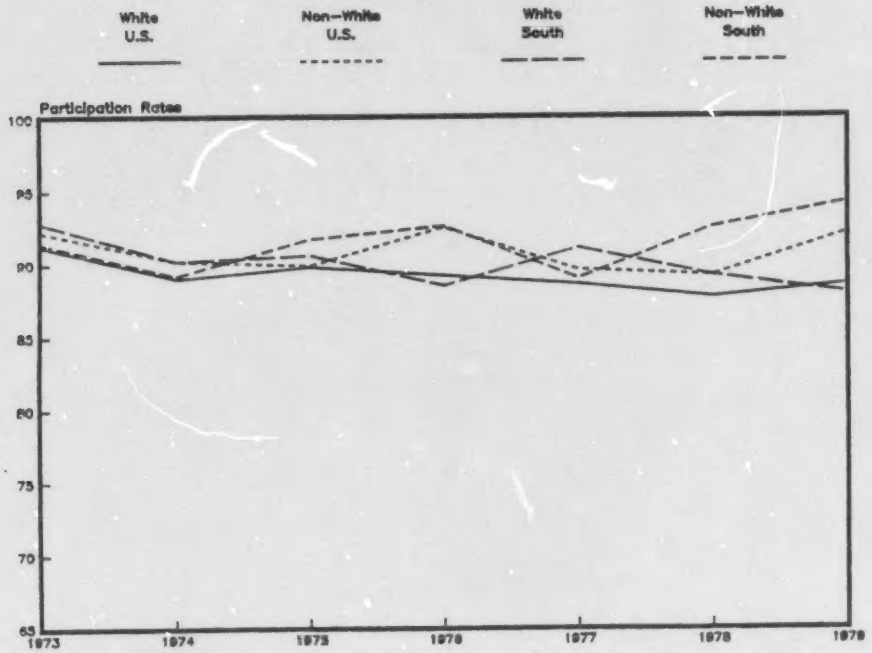
18-21 Yr Olds by Race.U.S. & North Central



Source: U.S. Bureau of Census, October CPS

Figure 46

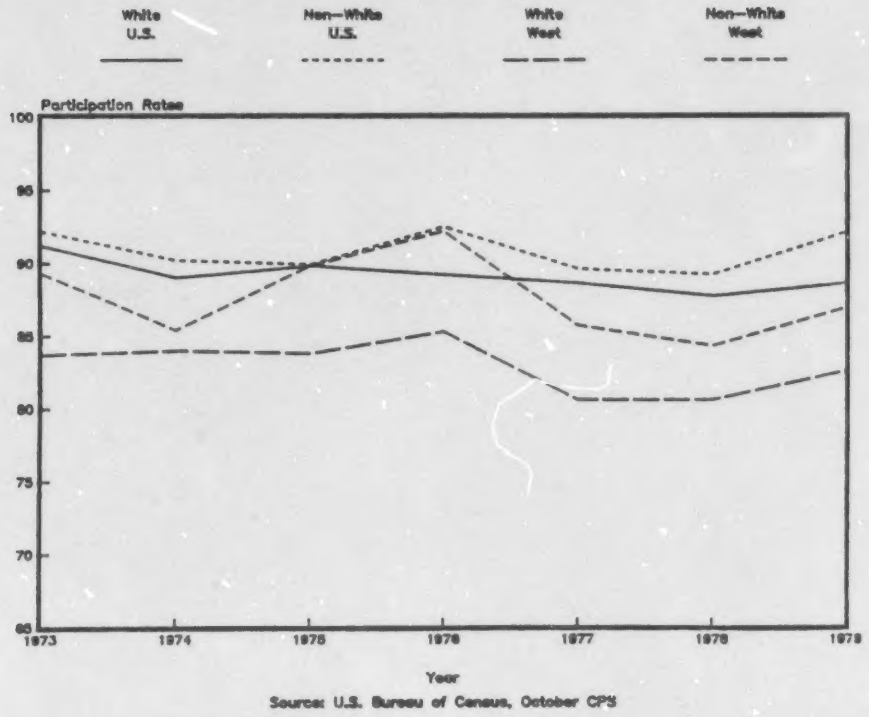
Full–Time Student Participation Rates
18–21 Yr Olds by Race.U.S. & South



Source: U.S. Bureau of Census, October CPS

Figure 47

Full-Time Student Participation Rates
18-21 Yr Olds by Race.U.S. & West



Source: U.S. Bureau of Census, October CPS

are somewhat more likely to attend full-time, there does not appear to be any change over time in the male rates relative to the female rates. Consequently, the earlier suggestion that the divergence in full-time attendance rates for all men and women being due to the increased enrollments of women over the age of 21 appears to be borne out.

When the full-time attendance patterns for men and women are compared by region (Figures 40-43), several distinct patterns emerge. First, the rates of full-time enrollment for women in the Northeast and South appear to be more stable than for men. This pattern again suggests that males are somewhat more sensitive to fluctuations in the business cycle than are women. In the remaining two regions, men and women appear to vary in very similar ways. In the North Central region (Figure 41), differences between the full-time attendance patterns of men and women are the most pronounced.

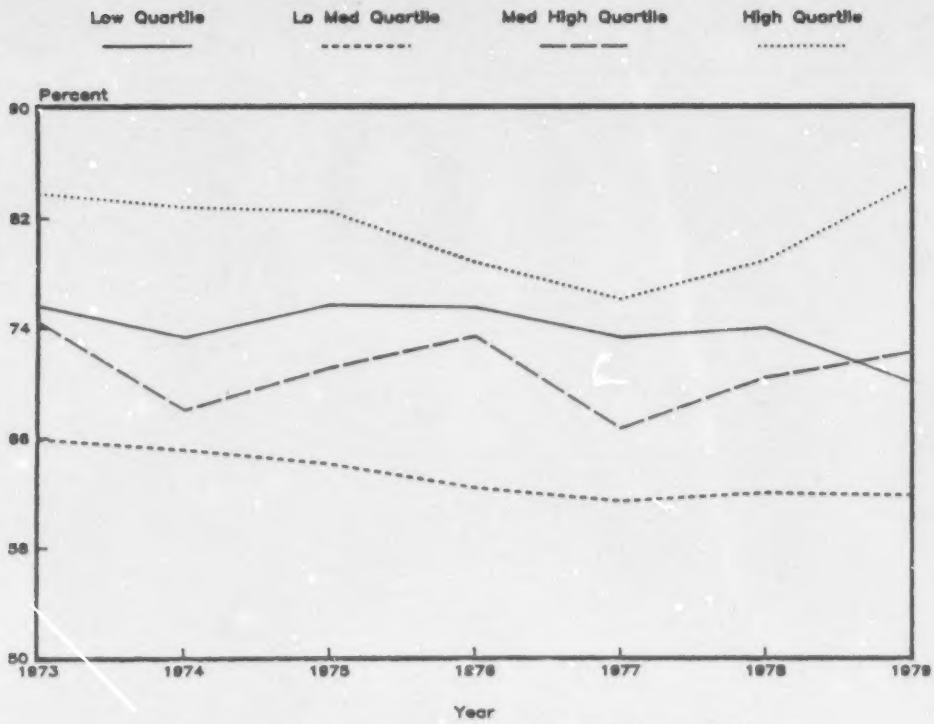
Figures 44-47 present the full-time attendance rates for whites and non-whites in the traditional college-age cohort. Overall, non-whites are slightly more likely to attend full-time than are white students. It is important to bear in mind, however, that whites are still more likely to go on to college in the first place (see Figure 1). There also appears to be substantial year-to-year variation in the full-time attendance rates for non-whites in this age cohort. Unlike the previous situations in which inter-year variation is noted, it may be the case that the variation in this situation is due to sampling fluctuations. Specifically, the sharp peaks (e.g., 1975 in the North Central region or 1977 in the Northeast) are due to the small size of the non-white sample (although still in excess of the 75,000 person weighted sample recommended by the Bureau of the Census).

Income Disaggregations. Figure 48 presents the full-time college attendance pattern by income quartile. Overall, full-time college attendance is greatest among the highest and lowest income quartiles, respectively, and least among the two middle income quartiles. This pattern is reproduced in every region of the country with the exception of the West where it is somewhat clouded. It also is consistent across the years covered by this study with the minor exception of 1979 when students from families in the lowest and the third income quartiles intersected. This pattern of results strongly suggests the impact of student financial aid programs. Specifically, it would appear that these programs have helped remove the financial barriers to enrolling full-time for students from the lowest income group. On the other hand, the concern over the "middle income squeeze" is readily apparent. While individuals from the two lowest income quartiles are approximately equally likely to attend college (see Figure 19), students from the low-medium income quartile are least likely to attend full-time.

Focusing upon the lowest and highest income quartiles, it appears that, within each quartile, males are more likely to attend full-time than are females (Figure 53). These differences are not as great in the highest income quartile as they are in the lowest income quartile. In fact, while there was some narrowing in the latter group in the middle of this period, old patterns appear to be reasserting themselves in 1979. It is tempting to suggest that underlying this pattern of results are pervasive sex biases working against the realization of the full enrollment potential of women, particularly as they get older. However, much more needs to be known about the attributes of the women in these various groups.

Figure 48

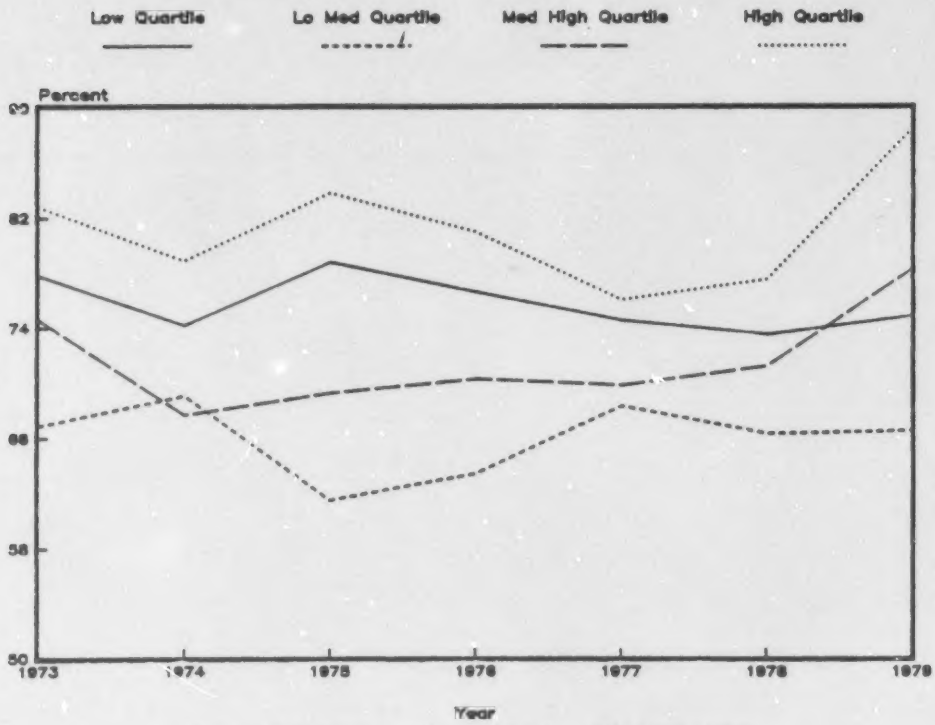
Full-Time Student Participation Rates
by Income Quartile. U.S.



Source: U.S. Bureau of Census, October CPS (1973-1979)

Figure 49

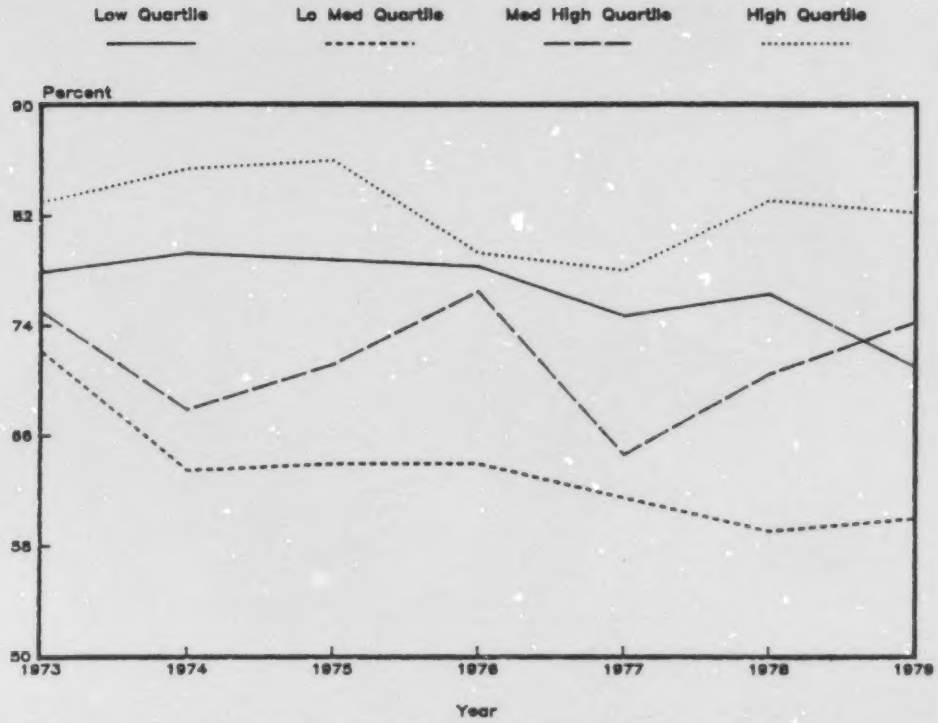
Full–Time Student Participation Rates
by Income Quartile. Northeast.



Source: U.S. Bureau of Census, October CPS (1973–1979)

Figure 50

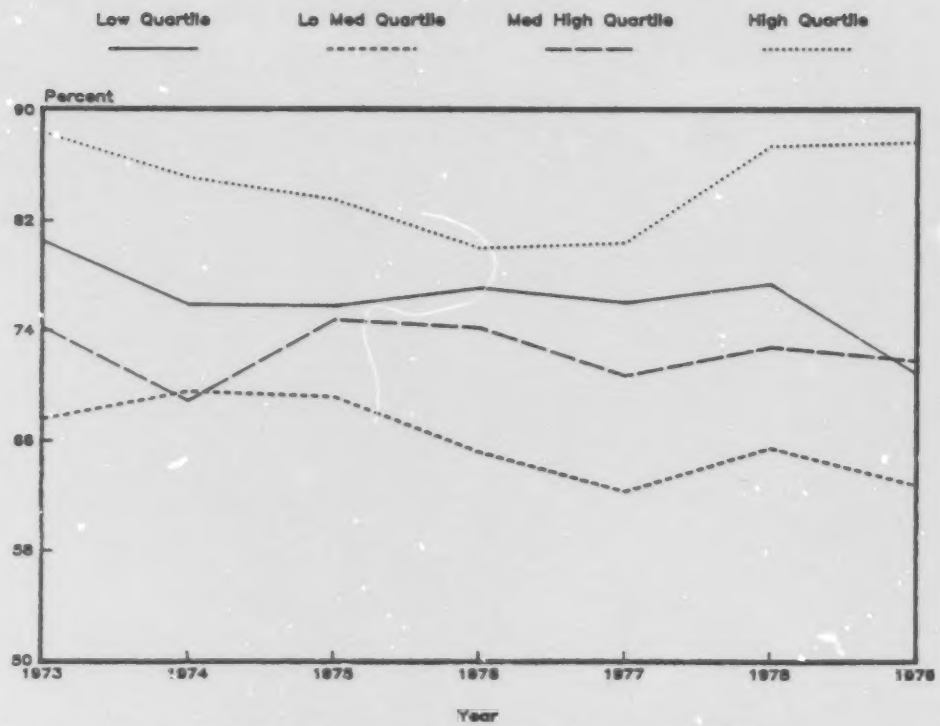
Full–Time Student Participation Rates
by Income Quartile. North Central.



Source: U.S. Bureau of Census, October CPS (1973–1979)

Figure 51

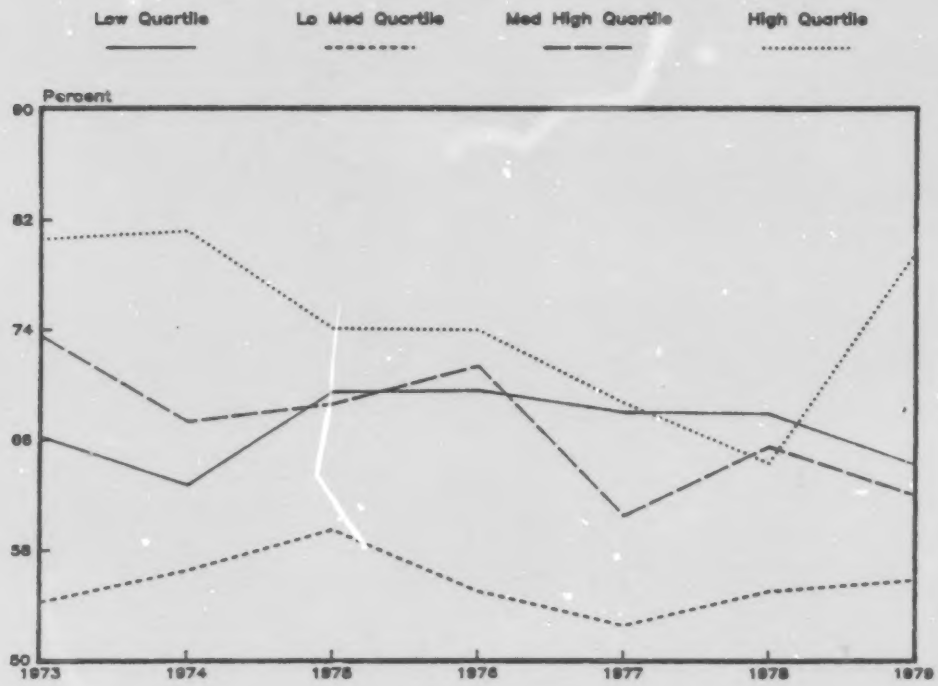
Full–Time Student Participation Rates
by Income Quartile. South.



Source: U.S. Bureau of Census, October CPS (1973–1979)

Figure 52

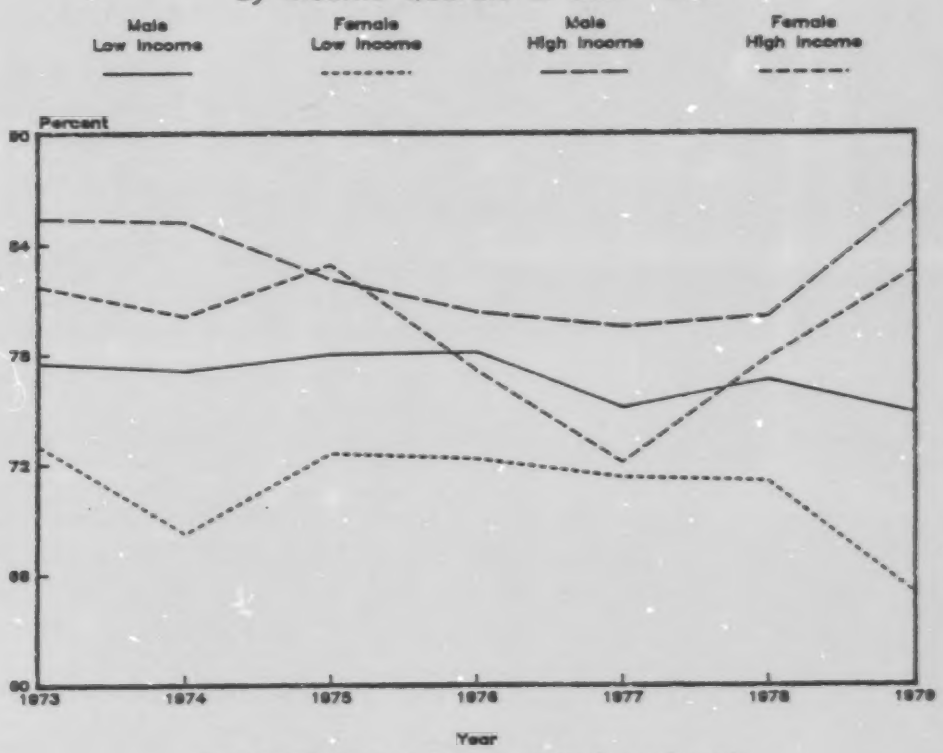
Full-Time Student Participation Rates
by Income Quartile. West.



Source: U.S. Bureau of Census, October CPS (1973-1979)

Figure 53

Full—Time Student Participation Rates
by Income Quartile & Sex. U.S.



Source: U.S. Bureau of Census, October CPS, 1973—1979

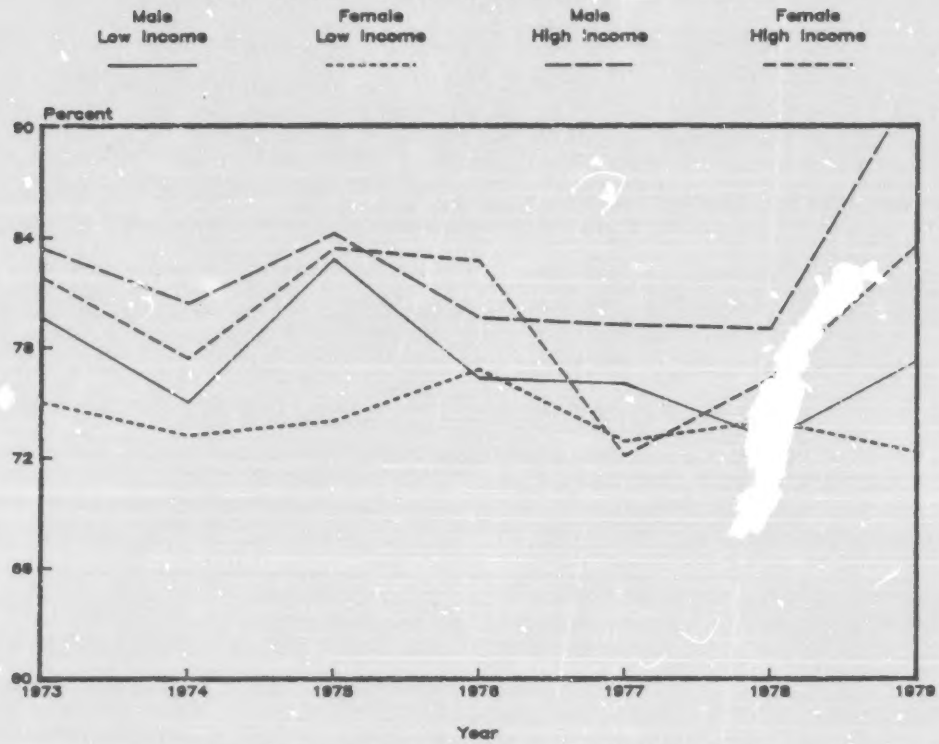
One curious pattern revealed by Figure 53 is the substantial dip in the full-time attendance patterns of women from the highest income quartile. Beginning in 1975, the rate of full-time attendance by high income women dropped 10 percentage points. After 1977, rates of full-time attendance among high income women went back to the levels noted before 1975. Further, this pattern of results is replicated in every region of the country except the West, where the turn-around did not occur until 1978 (see Figures 53-57). Why this pattern of results should occur is unclear.

Turning to the analysis of enrollment patterns by race, Figure 58 presents a provocative income-by-race interaction effect. On the one hand, the pattern for high income non-whites more closely approximates the full-time enrollment status of medium-high income whites. As was argued earlier (see page 17), this result would suggest that the absolute level of income and not one's standing within his/her community affects enrollment status. Note also the relatively sharp peaks and troughs for this group, fluctuations which probably result from the relatively small size of this group.

On the other hand, the rate of full-time enrollment for non-whites from low income families are approximately the same as for whites from high income families. Recall that in Figure 48, high income attendance rates exceeded thse of the lowest income quartile. When race is controlled, however, this relationship is further specified with low income non-whites behaving more like high income whites and low income whites behaving more like third quartile whites. Perhaps the impact of student financial assistance coupled with the removal of some discriminatory practices in the labor market have combined to form powerful incentives to attend college for non-white students from the lowest income group.

Figure 54

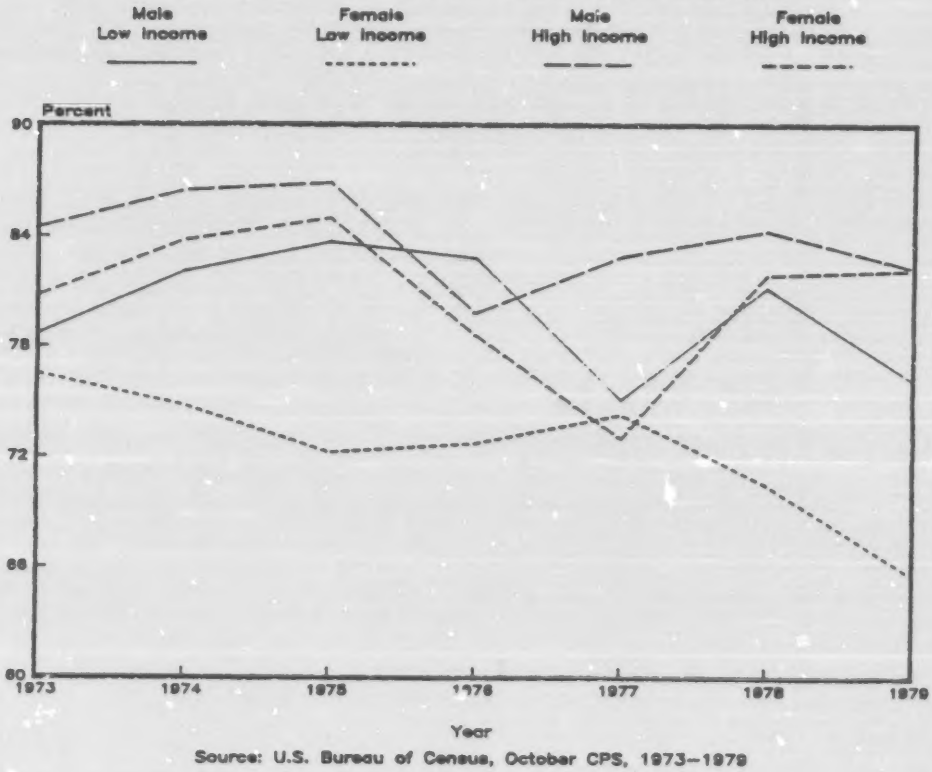
Full–Time Student Participation Rates
by Income Quartile & Sex. Northeast.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 55

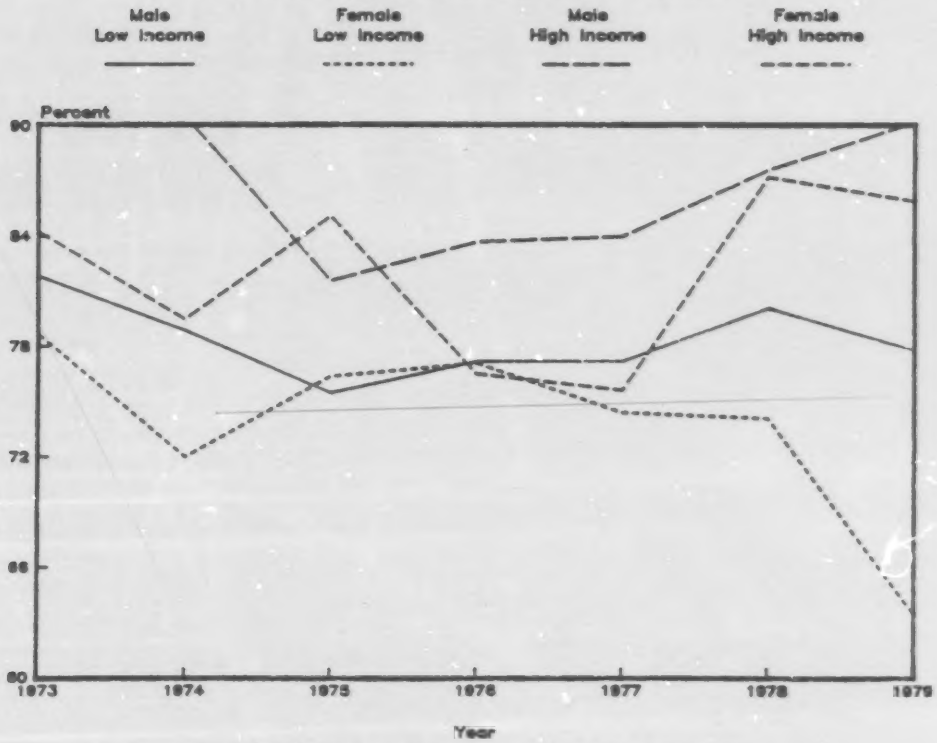
Full–Time Student Participation Rates
by Income Quartile & Sex. North Central.



Source: U.S. Bureau of Census, October CPS, 1973–1979

Figure 56

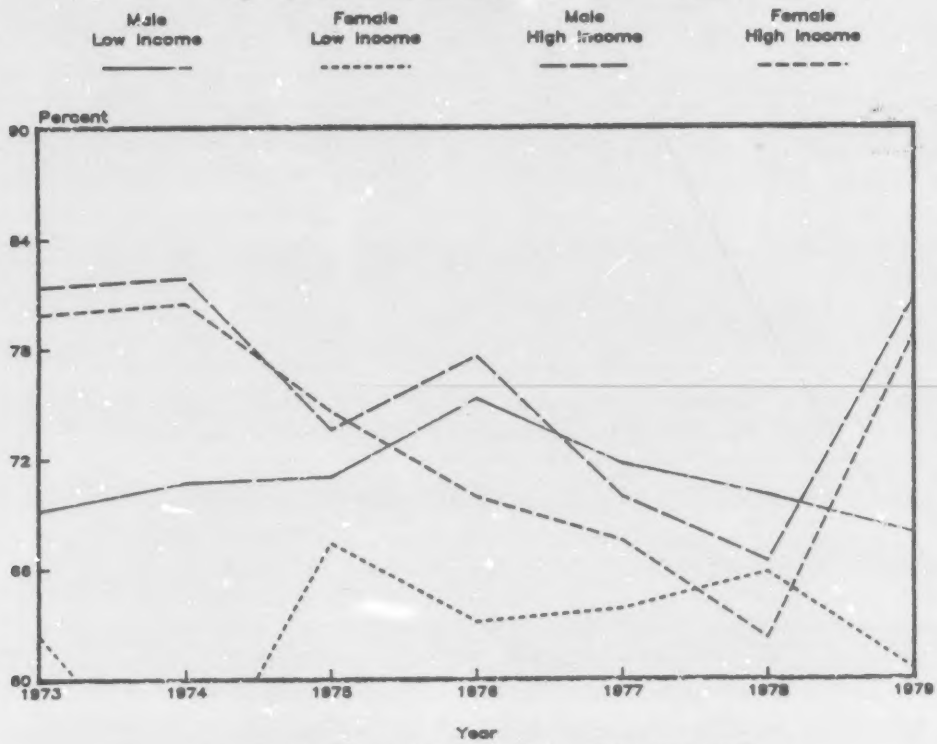
Full—Time Student Participation Rates
by Income Quartile & Sex. South.



Source: U.S. Bureau of Census, October CPS, 1973—1979

Figure 57

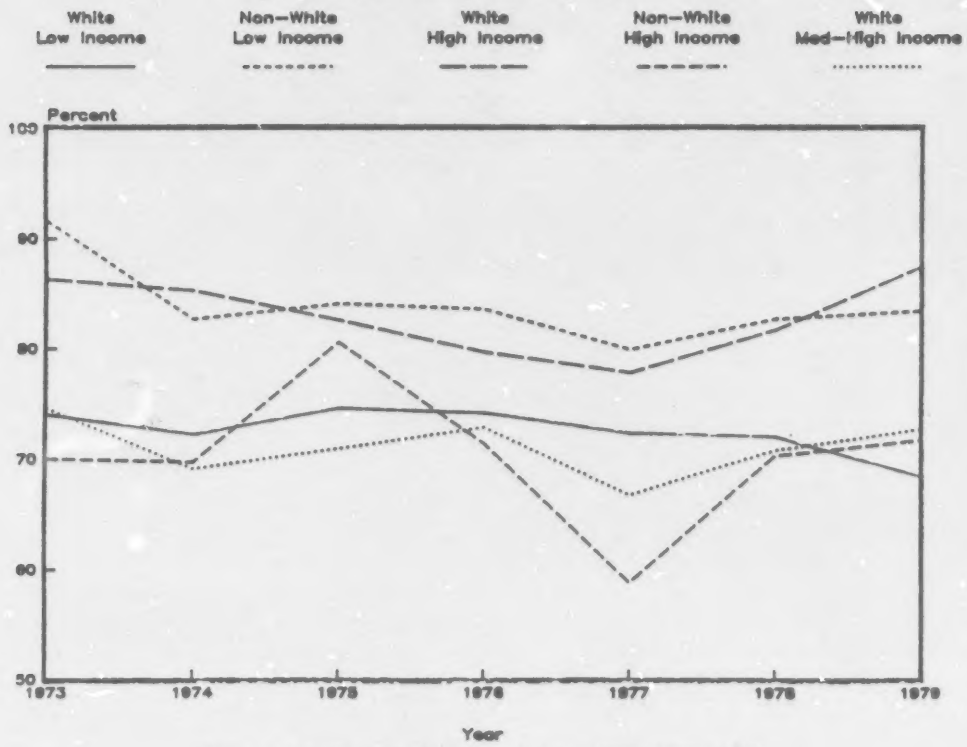
Full-Time Student Participation Rates
by Income Quartile & Sex. West.



Source: U.S. Bureau of Census, October CPS, 1973-1979

Figure 58

Full–Time Student Participation Rates
by Income Quartile & Race. U.S.



Source: U.S. Bureau of Census, October CPS, 1973–1979

IV. Some Tentative Public Policy Applications

Having reviewed the trends in college participation rates for the period 1973-1979, it is important to return to how changes in these participation rates will affect enrollments in colleges and universities. Two possible applications of the data prepared by this study will be illustrated in this section. These applications are intended to exemplify, not limit, the types of uses to which the data, in its current form, can be put. More sophisticated analyses must wait upon the development of data bases particularly appropriate for public policy analyses.

As indicated in the introduction, the overall level of enrollments in American colleges and universities will depend, in part, upon changes in the various rates of college participation reported earlier. For instance, to what extent must participation rates among 18-21 year old males and females increase to offset an anticipated, demographically induced decline in the number of persons in this age cohort? Table 3 provides one approach to resolving this question. (All of the data in Table 3 are derived from the tables produced by this study. See Technical Appendix A: Basic Data for Trends in College Participation Rates.)

Table 3

Participation Rates Required to Offset
Demographically Induced Enrollment Decline

	Region				
	U.S.	Northeast	North Central	South	West
Total Number in Cohort (in thousands)					
18-21 year old males	7940	1720	2281	2286	1352
18-21 year old females	8371	1765	2312	2786	1509
Total Number in Cohort with a 20% decline (in thousands)					
18-21 year old males	6352	1376	1825	1829	1082
18-21 year old females	6697	1412	1850	2229	1207
Total Number in College in 1979 (in thousands)					
18-21 year old males	2533	666	677	739	451
18-21 year old females	2664	633	677	852	502
Participation Rate Required to Complete Offset this Decline					
18-21 year old males	39.9	48.4	37.1	40.4	41.7
18-21 year old females	39.8	44.8	36.6	38.2	41.6

In 1979, the U.S. rate of college participation for 18-21 year-old males and females was 31.9 and 31.8, respectively. If, as anticipated, these two cohorts were to shrink by approximately 20 percent during the 1980s, the total available population would drop from 7,940,000 and 8,371,000 to 6,352,000 and 6,697,000 for men and women, respectively. In order to maintain the current levels of enrollment of 2,533,000 and 2,664,000, participation rates would have to increase to 39.9 and 39.8 percent of the reduced cohorts. At this point, a public policy analyst can review the rates of college participation throughout the period

covered by this study in order to assess the feasibility of these required increases in the current levels of college participation.

The investigation of potential enrollment increases to offset the smaller size of the traditional college-age cohort could easily be extended to other cohorts (e.g., 25-29 year olds, 30-34 year olds, etc.). It is important to note, however, that there could be substantial overlap in the number of people counted due to the way in which the data is stratified in these reports. Potential users of this data must, therefore, be careful in their use of this data so as to avoid double-counting members of various cohorts.

From the foregoing, it is clear that some changes in the rate of college attendance could offset some of the decline in college enrollments due to the smaller cohorts that are anticipated. A second use of the data presented in this report is to examine the relationship between changes in college participation rates and a variety of related factors. As is indicated in the Review of the Literature section, these factors include the anticipated additional earnings flowing from a college education, unemployment rates, and improved socioeconomic status. For example, consider the relationship between college participation and unemployment rates. Table 4 presents the overall rates of college participation (for all adults 18-34 years of age) and the total level of unemployment.

Table 4

Overall Unemployment and
College Participation Rates by Region

Year	Region				
	U.S.	Northeast	North Central	South	West
1973					
Participation Rate	14.8	15.9	14.4	12.3	17.9
Unemployment Rate	4.9	5.9	4.2	4.1	6.6
1974					
Participation Rate	15.5	16.6	15.0	13.4	18.6
Unemployment Rate	5.6	6.1	5.0	5.1	6.9
1975					
Participation Rate	16.6	17.3	16.7	12.6	19.2
Unemployment Rate	8.5	9.6	7.9	7.9	9.4
1976					
Participation Rate	16.6	17.2	17.2	14.5	18.5
Unemployment Rate	7.7	9.4	6.6	9.4	8.9
1977					
Participation Rate	16.7	17.8	16.3	14.5	19.5
Unemployment Rate	7.0	8.4	6.0	6.4	7.7
1978					
Participation Rate	15.7	17.5	14.9	14.2	17.2
Unemployment Rate	6.0	6.9	5.3	5.6	6.6
1979					
Participation Rate	15.5	17.0	14.6	14.2	17.4
Unemployment Rate	5.8	6.6	5.5	5.5	6.0

When these unemployment rates are related to overall participation rates (see Appendix E for a summary of these results), the following results are derived:

- college participation rates are directly related to unemployment rates for <u>that</u> year. There is no evidence of a lag of one-year between the rate of unemployment and overall participation rates.

- the relationship between participation and unemployment rates is approximated best by a logorithmic transformation of the unemployment rates. This result implies that as unemployment increases, so does the

rate of college participation but that the latter increases at a decreasing rate.

- the relationship between unemployment and college participation is statistically significant nationally and for each region except the South. This latter result suggests that changes in unemployment rates which are basically a function of the structure of a particular labor market (e.g., the South) and not associated with the business cycle are not likely to affect college participation rates.

The latter two findings deserve some additional comment. First, the finding that college participation rates increase but at a decreasing rate with increases in the rate of unemployment is very suggestive. When the rate of unemployment is fairly low, an increase in the rate of unemployment actually reduces the opportunity cost of attending college. Specifically, the income foregone is reduced by an increase in unemployment rates and consequently obtaining some college education becomes less expensive. As long as other factors are not changing, the individual is more likely to attend college. When, on the other hand, unemployment is fairly high, people are less likely to attend college because actual family or personal incomes are being reduced. Consequently, people are less likely to pay the direct costs of attending a college and are thus less likely to attend college.

Second, it is important to distinguish between two types of unemployment; structural and transitory. In the case of the former, unemployment is a basic part of the labor opportunities of a given region, as indicated in the Study Design section. It is unlikely that changes in this type of unemployment will affect the rate of college attendance for the permanently unemployed. This type of unemployment is usually associated with a number of labor markets in the

South, and consequently the fact that no relationship was found between unemployment and participation rates in this region is not surprising. In the case of the latter type of unemployment, unemployment is associated with the more transitory swings in the business cycle. In those labor markets where this type of unemployment is predominant, one could expect a strong relationship between unemployment and college participation rates. It is important to note that this relationship is of the form discussed in the preceding paragraph.

The preceding findings are extremely tentative. In order for more adequate results to be produced, it is necessary to prepare more disaggregated data bases that include data for individuals within the various groups described in this study and for the labor markets in which they live and work. The preparation of such data bases are now within reach of researchers and scholars of public policy and postsecondary education. Hopefully, resources will be found to make these data bases available so that more definitive answers can be provided for those persons responsible for the important public policy decisions of the 1980s.

Appendix A

For three years, 1969, 1975, and 1978, it was possible to compare Bureau of the Census estimates of college enrollments with those derived from the Higher Education General Information Survey (HEGIS) conducted by the National Center for Education Statistics (NCES). These comparisons of total headcount enrollment (full-time plus part-time) have been disaggregated by Bureau of the Census regions. The results of these comparisons are presented in Table A-1.

Table A-1

Comparison of HEGIS and October Current Population Surveys
Enrollment Estimates by Region
(In thousands)

	1969	1975	1978
Northeast			
HEGIS	1834	2481	2406
CPS	1929	2303	2309
Difference	-95	178	97
North Central			
HEGIS	2196	2756	2769
CPS	2069	2583	2458
Difference	127	173	311
South			
HEGIS	2068	3109	3148
CPS	1918	2679	2762
Difference	150	430	614
West			
HEGIS	1891	2802	2669
CPS	1514	2097	2131
Difference	377	705	538

Assuming that HEGIS estimates provide an actual count of student enrollments in postsecondary education, the overall error rates for the October Current Population Survey are 7.0, 13.3, and 14.2 percent for 1969, 1975, and 1979, respectively. The primary source of most of this error is to be found in the

West and the South (starting in 1975). This pattern of results might indicate a problem associated with those persons enrolling in two-year colleges which constitute approximately 55 and 33 percent of college enrollments in the West and South, respectively.

In order to examine this possibility in more detail, HEGIS and October CPS data were disaggregated by type of institution (two-year vs. four-year) and student ethnicity (white vs. non-white). These data are displayed in Table A-2.

Table A-2

Comparison of HEGIS and October CPS
for 1978 by Region, Institutional Type and Student Ethnicity
(in thousands)

	Institutional Type					
	Two-Year			Four-Year		
	White	Non-White	Total	White	Non-White	Total
Northeast						
HEGIS	521	99	620	1567	220	1786
CPS	423	56	479	1644	186	1830
Difference	98	43	141	-77	34	-44
North Central						
HEGIS	734	126	860	1742	167	1909
CPS	394	73	467	1804	187	1991
Difference	340	53	393	-62	-20	-82
South						
HEGIS	797	234	1040	1704	404	2108
CPS	553	124	677	1715	370	2085
Difference	244	110	363	-11	34	23
West						
HEGIS	1131	347	1477	987	205	1192
CPS	608	109	817	1142	172	1314
Difference	608	238	660	-155	33	-122

As expected, there is substantial under-enumeration by the October CPS of enrollments in two-year institutions. Error rates vary from 22 percent in the Northeast to 52 percent in the West. In all regions except the North Central,

this under-enumeration is slightly more serious for non-whites than for whites. In the case of students attending four-year institutions, HEGIS and CPS estimates are extremely close, within 4 percent or less for all regions except the West where the error rate is 10 percent. Typically, however, there is more error in enrollment estimtes for non-white students in four-year institutions.

In all cases involving two-year institutions, CPS estimates are less than those derived from the HEGIS enrollment survey. This result would suggest one of two factors underlying the observed discrepancies. First, the population of institutions may not be strictly comparable. As noted in the report, students enrolled in "special schools" are not counted as postsecondary education participants in the CPS estimates. They may, however, be included in the HEGIS universe and thus contribute to the observed error rate. Second, the population of eligible students is not comparable in these two surveys. As noted in the text, CPS estimates do not include military personnel or persons over the age of 34 while HEGIS enrollment estimates do.

One additional explanation that may be contributing to the observed discrepancies in two-year institutions may center upon the characteristics of students enrolling at such institutions. Students attending such institutions are more likely to be attending part-time and approximately one-in-five are non-white. The implication is that the CPS under-represents such students. If this under-enumeration is in fact occurring, then the longer discrepancies are occurring in precisely those institutions serving students most likely to be under-counted.

Appendix B

Table B-1 presents the estimated income quartiles for whites and non-whites for the seven years covered by this report. These data are reported in both current and constant (1967) dollars. Even a cursory examination of this table reveals substantial differences in the income levels for whites and non-whites for the period 1973-1979.

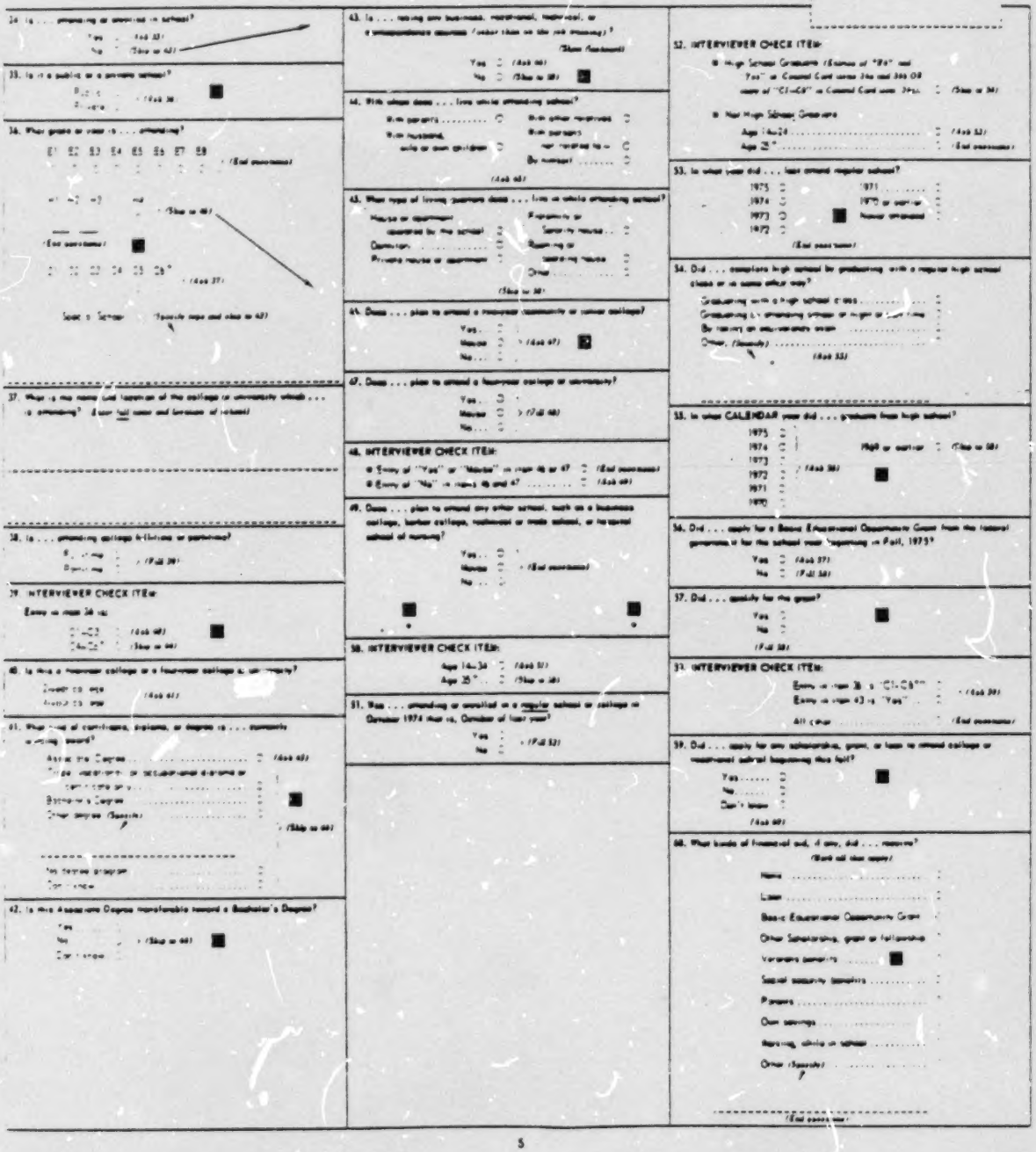
Based on these estimates, each adult was coded into one of the quartiles according to his/her income category. The actual recoding procedure for the October Supplement to the Current Population Survey is available in the Technical Appendix to this monograph.

Table B-1

Income Quartile Estimates
for the Period 1973-1979

Cohort	1973	1974	1975	1976	1977	1978	1979
White							
Current Dollars							
Q1	7760	8355	8667	9447	10081	11084	12403
Q2	12861	13548	14273	15749	17030	18468	20570
Q3	19867	20953	21845	22485	22576	27446	30871
Constant Dollars*							
Q1	6193	6278	5868	5860	5913	6107	6347
Q2	10121	10179	9664	9770	9988	10175	10527
Q3	15856	15742	14970	13948	13241	15122	15799
Non-White							
Current Dollars							
Q1	4150	4541	4826	5084	5355	5945	6467
Q2	7675	8614	9333	9833	10168	11954	12743
Q3	12975	14515	15750	17339	18500	20109	22353
Constant Dollars*							
Q1	3312	3412	3267	3154	3141	3275	3310
Q2	6125	6472	6319	6100	5964	6586	6521
Q3	10355	10905	10664	10756	10850	11079	11440

* Base = 1967 dollars



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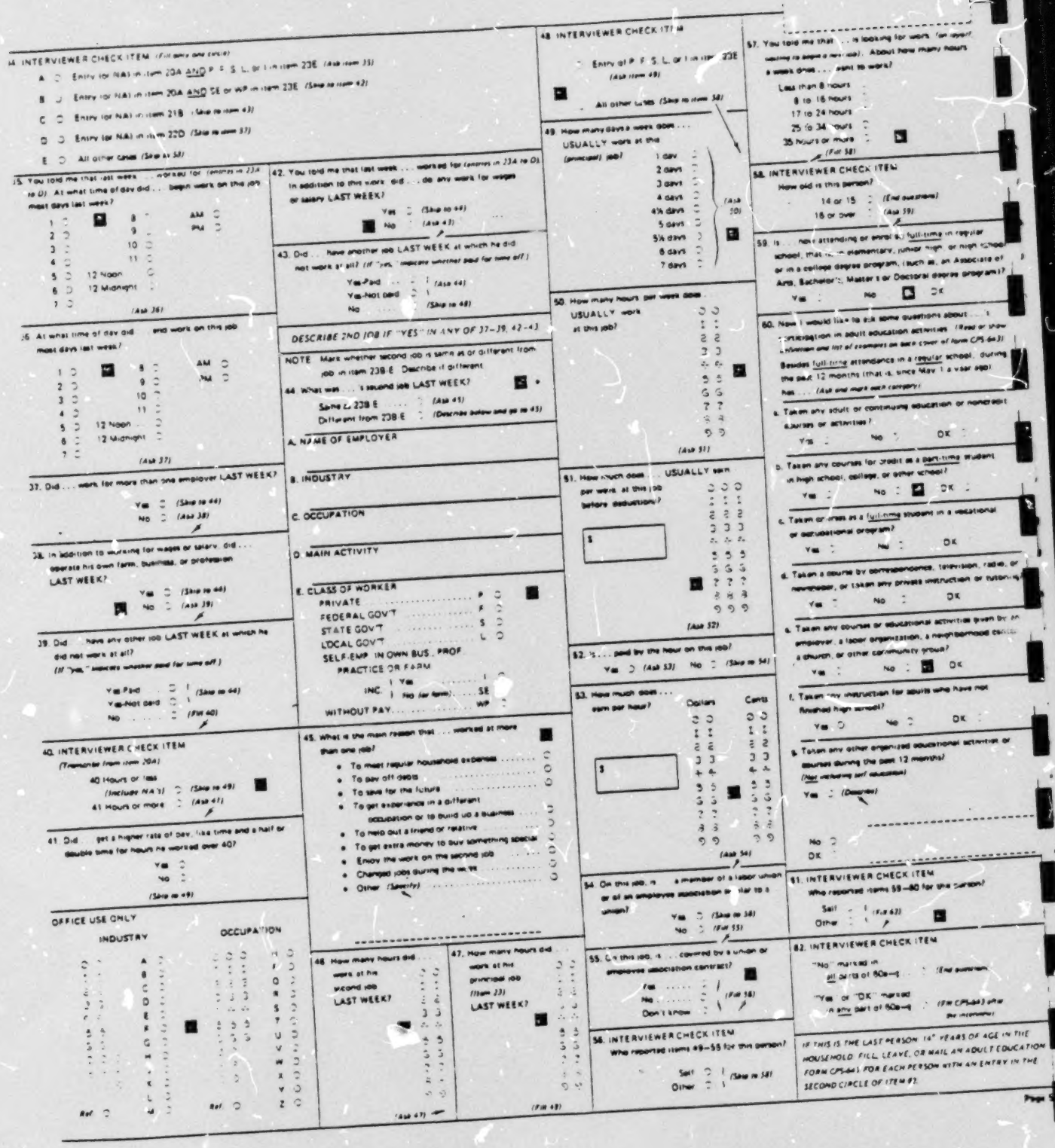

34 INTERVIEWER CHECK ITEM (Fill only one circle)
A ○ Entry for NA) in item 20A AND P F S L, or 1 in item 23E (Ask item 35)
B ○ Entry for NA) in item 20A AND SE or WP in item 23E (Skip to item 42)
C ○ Entry for NA) in item 21B (Skip to item 43)
D ○ Entry for NA) in item 22D (Skip to item 37)
E ○ All other cases (Skip to 38)

35 You told me that last week . . . worked for (names in 33A to D). At what time of day did . . . begin work on the job most days last week?
1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 12 Noon 6 ○ 12 Midnight 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ AM ○ PM ○
(Ask 36)

36 At what time of day did . . . end work on this job most days last week?
1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 12 Noon 6 ○ 12 Midnight 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ AM ○ PM ○
(Ask 37)

37 Did . . . work for more than one employer LAST WEEK?
Yes ○ (Skip to 44)
No ○ (Ask 38)

38 In addition to working for wages or salary, did . . . operate his own farm, business, or profession LAST WEEK?
Yes ○ (Skip to 44)
No ○ (Ask 39)

39 Did . . . have any other job LAST WEEK at which he did not work at all?
(If "Yes," indicate whether paid for time off.)
Yes-Paid ○ (Skip to 44)
Yes-Not paid ○
No ○ (Fill 40)

40 INTERVIEWER CHECK ITEM
(Transcribe from item 20A)
40 Hours or less (Include NA's) ○ (Skip to 49)
41 Hours or more ○ (Ask 41)

41 Did . . . get a higher rate of pay, like time and a half or double time for hours he worked over 40?
Yes ○
No ○
(Skip to 49)

42 You told me that last week . . . worked for (names in 33A to D). In addition to the work did . . . do any work for wages or salary LAST WEEK?
Yes ○ (Skip to 44)
No ○ (Ask 43)

43 Did . . . have another job LAST WEEK at which he did not work at all? (If "yes," indicate whether paid for time off.)
Yes-Paid ○ (Ask 44)
Yes-Not paid ○
No ○ (Skip to 48)

DESCRIBE 2ND JOB IF "YES" IN ANY OF 37–39, 42–43

NOTE Mark whether second job is same as or different from job in item 23B-E Describe if different

44 What was . . . 's second job LAST WEEK?
Same as 23B-E ○ (Ask 45)
Different from 23B-E ○ (Describe below and go to 45)

A. NAME OF EMPLOYER

B. INDUSTRY

C. OCCUPATION

D. MAIN ACTIVITY

E. CLASS OF WORKER
PRIVATE ..... P ○
FEDERAL GOVT ..... F ○
STATE GOVT ..... S ○
LOCAL GOVT ..... L ○
SELF-EMP IN OWN BUS., PROF PRACTICE OR FARM
INC. Yes ○ / No (or farm) ○ ..... SE ○
WITHOUT PAY ..... WP ○

45 What is the main reason that . . . worked at more than one job?
- To meet regular household expenses ○
- To pay off debts ○
- To save for the future ○
- To get experience in a different occupation or to build up a business ○
- To help out a friend or relative ○
- To get extra money to buy something special ○
- Enjoy the work on the second job ○
- Changed jobs during the week ○
- Other (Specify) ○

46 How many hours did work at his second job LAST WEEK?
(Ask 47)

47 How many hours did work at his principal job (Item 23) LAST WEEK?
(Fill 48)

48 INTERVIEWER CHECK ITEM
Entry of P F S L, or 1 in item 23E (Ask item 49)
All other cases (Skip to item 58)

49 How many days a week does . . . USUALLY work at this (principal) job?
1 day ○ 2 days ○ 3 days ○ 4 days ○ 4½ days ○ 5 days ○ 5½ days ○ 6 days ○ 7 days ○
(Ask 50)

50 How many hours per week does . . . USUALLY work at this job?
(Ask 51)

51 How much does . . . USUALLY earn per week at this job before deductions?
$
(Ask 52)

52 Is . . . paid by the hour on this job?
Yes ○ (Ask 53) No ○ (Skip to 54)

53 How much does . . . earn per hour?
Dollars Cents
$
(Ask 54)

54 On this job, is . . . a member of a labor union or of an employee association similar to a union?
Yes ○ (Skip to 56)
No ○ (Fill 55)

55 Is this job . . . covered by a union or employee association contract?
Yes ○ (Fill 56)
No ○
Don't know ○

56 INTERVIEWER CHECK ITEM
Who reported items 49–55 for this person?
Self ○ (Skip to 58)
Other ○

57 You told me that . . . is looking for work (or report wanting to begin a new job). About how many hours a week does . . . want to work?
Less than 8 hours ○
8 to 16 hours ○
17 to 24 hours ○
25 to 34 hours ○
35 hours or more ○
(Fill 58)

58 INTERVIEWER CHECK ITEM
How old is this person?
14 or 15 ○ (End questions)
16 or over ○ (Ask 59)

59 Is . . . now attending or enrolled in full-time in regular school, that is, in elementary, junior high or high school or in a college degree program, (such as an Associate of Arts, Bachelor's, Master's or Doctoral degree program)?
Yes ○ No ○ DK ○

60 Now I would like to ask some questions about . . . 's participation in adult education activities. (Read or show information and list of examples on back cover of form CPS-643)
Besides full-time attendance in a regular school, during the past 12 months (that is, since May 1 a year ago) has . . . (Ask and mark each category)

a. Taken any adult or continuing education or noncredit courses or activities?
Yes ○ No ○ DK ○

b. Taken any courses for credit as a part-time student in high school, college, or other school?
Yes ○ No ○ DK ○

c. Taken or been as a full-time student in a vocational or occupational program?
Yes ○ No ○ DK ○

d. Taken a course by correspondence, television, radio, or newspaper, or taken any private instruction or tutoring?
Yes ○ No ○ DK ○

e. Taken any courses or educational activities given by an employer, a labor organization, a neighborhood center, a church, or other community group?
Yes ○ No ○ DK ○

f. Taken any instruction for adults who have not finished high school?
Yes ○ No ○ DK ○

g. Taken any other organized educational activities or courses during the past 12 months?
(Not including self-education)
Yes ○ (Describe)
No ○
DK ○

61 INTERVIEWER CHECK ITEM
Who reported items 59–60 for this person?
Self ○ (Ask 62)
Other ○

62 INTERVIEWER CHECK ITEM
"No" marked in all parts of 60a–g ○ (End questions)
"Yes" or "DK" marked in any part of 60a–g ○ (Fill CPS-643 after the interview)

IF THIS IS THE LAST PERSON 14 YEARS OF AGE IN THE HOUSEHOLD, FILL, LEAVE, OR MAIL AN ADULT EDUCATION FORM CPS-643 FOR EACH PERSON WITH AN ENTRY IN THE SECOND CIRCLE OF ITEM 62.

OFFICE USE ONLY
INDUSTRY
Ref ○ A ○ B ○ C ○ D ○ E ○ F ○ G ○ H ○ J ○ K ○ L ○ M ○
OCCUPATION
Ref ○ N ○ P ○ Q ○ R ○ S ○ T ○ U ○ V ○ W ○ X ○ Y ○ Z ○

Appendix D

A Brief Note on Participation Rates

From a public policy perspective, the use of participation rates implies that equal access to postsecondary education will be achieved when these rates are the same for each and every group. With this definition of equality of opportunity, policies could be developed to increase participation among those groups whose rate of college participation is either the same as for other groups or reaches some minimal criterion. For instance, "targeting" student financial aid for potential students from low income families would exemplify such policies.

There are, however, some serious limitations to this use of student participation rates. Foremost among these limitations is the problem of differences between groups in the proportion of individuals who are indifferent between attending college or entering the labor force. Men and women, white and non-white, low and high income individuals can be expected to differ in the degree to which they aspire to a college education. To the extent that these differences represent individual preferences and not factors associated with one's socioeconomic origins, to that extent can one be misled by the various student participation rates presented in this study.

If one were to ignore these differences in individual preferences, then one implicitly is prescribing that public policies be "targeted" for persons who are increasingly indifferent toward receiving a college education. It might be questioned seriously as to whether or not this allocation of state or federal resources is efficient. Consequently, when reviewing the various participation rates presented in this study, one must consider whether or not the observed differences reflect differences in the preferences for a college education among certain groups or inequality of opportunity.

Appendix E

Table E summarizes the results for the estimation of the relationship between unemployment and college participation rates. Several comments about this table are in order.

First, the variable "unemployment rate" is a logarithmic transformation of the data presented in Table 4. Although not displayed, models in which this transformation was conducted provided a somewhat better fit to the very limited number of observations in this time series.

Second, two regions were found to have statistically significant autocorrelation, as determined by the Durbin-Watson statistic. Consequently, a statistical procedure appropriate for correcting this first-order autocorrelation was employed. For the remaining regions, parameter estimates are provided by the technique of ordinary least squares.

Table E-1

Summary of Results
Estimated Association Between Overall Unemployment Rates
and the Rate of College Participation

	Region				
	U.S.	Northeast	North Central	South	West
Constant	9.34	13.04	7.44	11.28	10.35
Standard Error	1.05	1.79	2.28	2.46	2.09
Unemployment Rate	3.54	2.00	4.69	1.32	4.00
Standard Error	.56	.90	1.30	1.35	1.04
R Square	.89	.50	.72	.16	.75
Estimated First-Order Autocorrelation	nsd	.33	nsd	inc	-.55

nsd = no significant difference

inc = inconclusive

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